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The Chicago Medical Recorder

OFFICIAL JOURNAL
THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER
TRI-STATE MEDICAL SOCIETY
MEDICO-LEGAL SOCIETY

Entered as Second-Class Matter May 29, 1891, at the Post Office at Chicago, Ill., under Act of March 3, 1879
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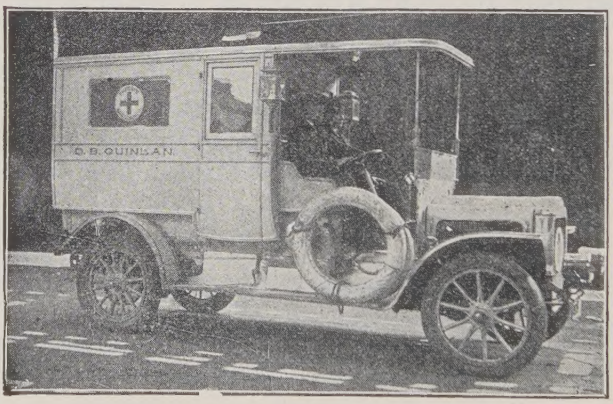

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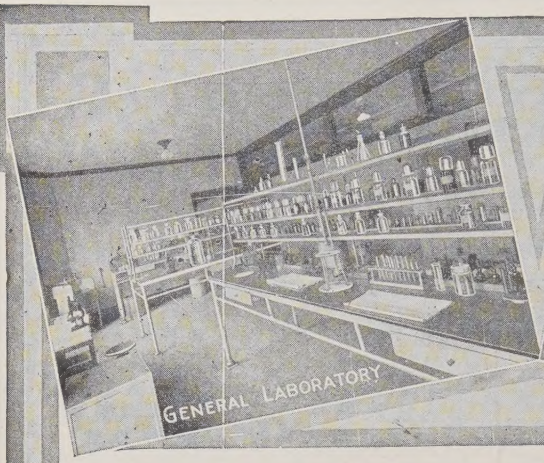

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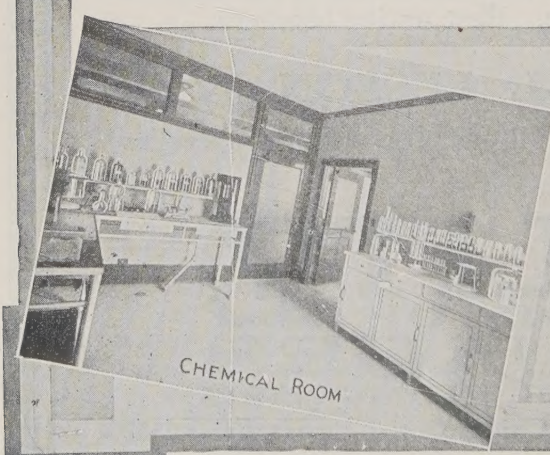

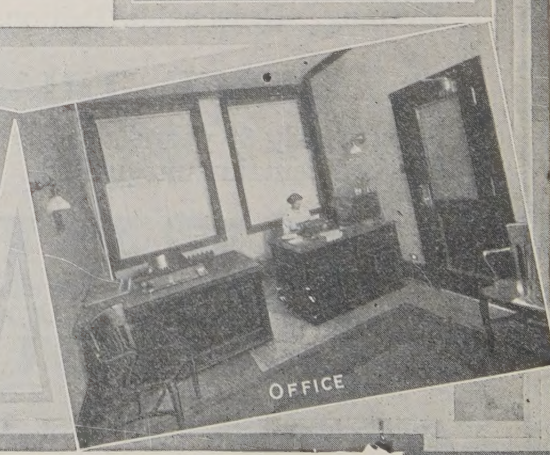

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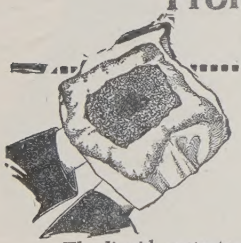

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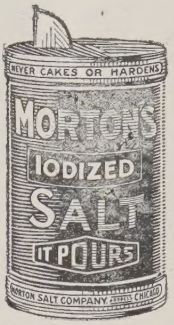

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Official Journal
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Vol. XLVII OCTOBER, 1925 No. 10

ORIGINAL ARTICLES

Some Considerations of the Pathology of Thyroid Hyperplasia*

By Ralph L. Thompson, M.D.

(Professor of Pathology St. Louis University School of Medicine, Director National Pathological Laboratory, St. Louis)

Since so much has been written on the alterations of the structure of the thyroid gland in hyperthyroidism, I desire to discuss, as briefly as possible, only the morphological changes in this organ which the pathologist sees, either at autopsy or on operative material in cases of this disorder, and practically limiting myself to the progressive changes found in the thyroid gland. In glancing over the program of this meeting, I find the terms "colloid," "adenoma" and "exophthalmic" in use. For practical purposes these terms, with certain qualifying adjectives, may serve to cover the ground of the goitre pathology we wish to discuss at this time. In general, the classification of histologic conditions of the thyroid by Louis B. Wilson seems as good a starting point as we have for discussing any given group of lesions of the thyroid gland. Under progressive changes, Wilson gives the following types: 1. Hypertrophy (functional, with hyperemia). 2. Hyperplasia ("exophthalmic" goitre). 3. Adenomatosis (multiplication of acini without encapsulation). 4. Regeneration (of previously atrophic parenchyma).

If now we consider the subject of hyperthyroidism as seen by the clinician, how can we best team it up with these conditions seen by the pathologist. The hyperplastic type offers little difficulty. Given a typical diffuse parenchymatous hyperplastic goitre the pathologist can closely tell you the condition of the patient and the basal metabolic rate, from a glance at a frozen section. But not so with certain of the adenomatous types and diffuse colloid types in which the clinical symptoms may be way out of proportion to the pathological find-

*Real before the American Association for the Study of Goiter, at Bloomington, Ill., January 30, 1925.

ings. Endeavors have been made in various ways to more closely correlate this work. Thomas, Webb and Baumgartner have recently studied 100 goitre cases for a comparison of the clinical and microscopical findings. These authors rate the activity of the gland by an arbitrary cell classification running from I to V. Tall, granular cells, with frayed, free surfaces, impouching of follicle linings and absence of colloid were rated very active and called No. I. Cuboidal or flat cells, follicles dilated with colloid, were considered inactive or rated No. V. Other conditions between these extremes were rated accordingly. On the basis of this study, the following interesting results were obtained: The clinical diagnosis in these cases was colloid 12, exophthalmic 9, non-toxic adenomas 35 and toxic adenomas 44. The microscopic diagnosis was colloid 43, exophthalmic 11, toxic adenoma 23, non-toxic adenoma 21.

This careful study serves to confirm the agreement of the clinician and pathologist on hyperplastic (exophthalmic) goitre and shows that many of the adenoma cases that are clinically and metabolically active show no active pathological findings, and also that about one-third of the cases that are inactive clinically and metabolically show microscopic activity.

There is one thing to be borne in mind in comparing clinical and microscopic findings in these cases and that is that hyperthyroidism is not a stationary disease but that changes are constantly taking place in the gland. The anatomic changes have been grouped by Marine to correspond with the functional changes into three stages:

1. The hyperactive stage,
2. The involutionary or recovery (or colloid) stage, and
3. The thyroid exhaustion or myxedema stage.

These stages, of course, overlap both physiologically and anatomically and sharp division is more or less arbitrary.

Marine's interpretation of these changes is that the essential physiologic disturbance in the thyroid in exophthalmic goitre is a relative insufficiency; its reaction compensatory and its significance symptomatic. He has shown that during this stage of activity there is less iodine produced which gives us a basis for the use of iodine in this disease.

The first most notable change in the thyroid in acute Graves' disease is an increased blood supply. From capsular vessels to intra-alveolar capillaries, congestion is evidenced by the increased size, softness and bright red color of the gland. Microscopically, proliferative changes are seen, consisting of an increase in the epithelial cells within the alveoli. This may appear as an increase of cells in a single layer, a reduplication of layers, infolding of the lining epithelium or the formation of new alveoli (adenoma type). The normal cuboidal cells are replaced by high columnar epithelium. Foci of lymphoid tissue may be seen. (This will be discussed later.) The colloid content of the follicles stains less intensely than normal, it appears thinner, vacuolated, or is lost altogether and only a few desquamated cells and granular debris appear within the follicle.

Now, as clinical and experimental observations have shown, the progressive hyperplasia does not continue its course for a very long time uninterruptedly. There are remissions and exacerbations, or the process may remain stationary or the gland may revert completely to the normal again. This gives us, according to Marine, what we may call a reverse pathology, in which the gland simply goes backward reversely through the changes just described until it is again

normal. This can be demonstrated in the dog by the administration of iodine. It is supposed to be what occurs in the human in the spontaneously recovering cases of exophthalmic goiter. It is evident, then, that when we examine a gland sent us by the surgeon, that we do not always know from the histologic picture whether it is progressively or retrogressively active.

The third stage, as we have here termed it, of exophthalmic goiter is of especial interest from a histologic standpoint. The gland in marked hyperplasia is gray-red in color, firm and opaque. If there are no periods of rest for the hyperactive cells, these cells must sooner or later degenerate and die of exhaustion. Glands undergoing this degeneration become smaller and firmer. On section, the gland is dry and granular and may show areas of haemorrhage or degeneration. Microscopically, there is seen increase of stroma with compression of the follicles. The epithelial cells show various degenerative changes. Desquamation of these cells in large and small masses is commonly seen. The colloid is dense and stains deeply.

Patients with such glands may show no clinical evidence of a diminution in function of the gland unfortunately, for as Wilson has pointed out, they have been so thoroughly saturated with the thyroid toxin that permanent changes in the heart and nervous system are still active and such glands are, consequently, treated surgically sometimes, despite the fact that the patient is on the edge of myxedema.

There is one thing that I have so far failed to mention that is of great importnace in goiter pathology, and that is the coincidence of thymicolymphatic and thyroid hyperplasia. Some fifteen years ago I happened on a hyperplastic thyroid that was rich in lymphoid tissue, including typical germinal centers. I thought I had found something new, but even such text books as Osler's medicine gave a complete discussion of this condition. Virchow, even, noted the frequent combination of thymus hyperplasia and goiter. Roessl reported 52 cases of hyperthyroidism with thymus hyperplasia. Kapelle found thymus hyperplasia present in 79% of his autopsies on Basedow's disease. This condition has been studied of Kocher and by Simonds. In fact, the literature teems with these cases. Warthin has recently gone so far as to classify Basedow's goiter, toxic goiter and toxic adenoma as a constitutional entity, based on a rudimentary hyperplasia of the lymph nodes of the thyroid in connection with a persistent or hyperplastic thymus and other stigmata of the thymicolymphatic constitution. Warthin states that it is the custom of his laboratory to make the findings of hyperplastic lymph nodes in the thyroid the one essential criterion for the diagnosis of the Basedow's constitution. It is probably that there will be some considerable opposition to this theory as including all hyperthyroidism as thymogenic, but it may well serve the purpose of a more careful study of status thymicolymphaticus, which I consider one of the most important of all glandular diseases.

This lymphoid tissue hyperplasia is probably not to be confounded with certain lymphoid cell infiltrations that we find in the thyroid gland in the course of the degenerative changes in hyperplastic goiter that we have just described. Mallory has described the invasion of lymphocytes and endothelial leucocytes into the acini on the basis that these cells are attracted by the altered colloid material and that these invasive cells act as phagocytes in removing the broken down cell material. More recently, Goormaghtig has described this lymphocytic invasion and believes that these cells not

only assist as scavengers, but that they destroy the functional thyroid cells and replace them. In other words, lymphycytosis may be present in hyperplastic goiter just as it is in tuberculosis, lues and other chronic inflammatory diseases. This, to my mind, would have no particular connection with diffuse areas of lymph node tissue possessing true germinal centers as we have previously described and constituting the thymogenic type of exophthalmic goiter.

In conclusion, I would like to pay my respects to the American Society for the Study of Goiter for the great educational value of such a program as has been assembled at this time. It would seem that with all that has been said and done, not only in the medical profession, but by the popular press, that no practicing physician could go on without an intimate knowledge of thyroid disease. I am sorry to say that on the contrary, as director of a diagnostic laboratory, I find a great many physicians who are very ignorant, not only of the physiological and pathological aspects of thyroid disease, but also of many of the clinical signs of hypo and hyperthyroid activity. I will say that to some of these men, the determination of the basal metabolic rate has been a fairy wand that has waved all their troubles away and permitted them to go on and treat their patients on a high-low basis, leaving pathology and physiology to those who wish to worry themselves with such intricateness. But, fortunately, with such gatherings as this to guide us, may their number speedily decrease.

Custer's Last Battle

By One of His Troop Commanders

(Reprinted from the "Century Magazine" of January 1892,

[*Recently attempts have been made to change the general opinion that the massacre and defeat of Custer's troops at the Battle of the Little Big Horn River was not due to the negligence of Major Reno in supporting General Custer, but was due to lack of judgment on General Custer's part. Having studied the matter carefully for many years, having had correspondence with Mrs. General Custer, having seen Major Reno in person, etc., we believe, in memory of this great hero—General Custer—that a reprint at this time, of the article to follow, will be of general interest.—The Editor.*]

On the 16th of April, 1876, at McComb City, Missouri, I received orders to report to my troop ("K," 7th Cavalry) to the Commanding General of the Deparent of Dakota, at St. Paul, Minnesota. At the latter place about twenty-five recruits fresh from civil life joined the troop, and we were ordered to proceed to Fort Abraham Lincoln, Dakota, where the Yellowstone expedition was being organized. This expedition consisted of the 7th United States Cavalry, commanded by General George A. Custer, 28 officers and about 700 men; two companies of the 17th United States Infantry, and one company of the 6th United States Infantry, 8 officers and 135 men; one platoon of Gatling guns, 2 officers and 32 men (of the 20th United States Infantry); and 40 "Ree" Indian scouts. The expeditionary forces were commanded by Brigadier-General Al-

fred H. Terry, the Department Commander, who, with his staff, arrived several days prior to our departure.

On the 17th day of May, at 5 A. M., the "general"[1] was sounded, the wagons were packed and sent to the Quartermaster, and by six o'clock the wagon-train was on the road escorted by the infantry. By seven o'clock the 7th Cavalry was marching in column of platoon around the parade-ground of Fort Lincoln, headed by the band playing "Garry Owen," the Seventh's battle tune, first used when the regiment charged at the battle of Washita. The column was halted and dismounted just outside the garrison. The officers and married men were permitted to leave the ranks to say "good-bye" to their families. General Terry, knowing the anxiety of the ladies, had assented to, or ordered this demonstration in order to allay their fears and satisfy them, by the formidable appearance we made, that we were able to cope with any enemy that we might expect to meet.

Not many came out to witness the pageant, but many tear-filled eyes looked from the windows.

During this halt the wagon-train was assembled on the plateau west of the post and formed in column of fours. When it started off the "assembly" was sounded and absentees joined their commands. The signals "Mount" and Forward" were sounded, and the regiment marched away, the band playing "The Girl I Left Behind Me."

The 7th Cavalry was divided into two columns, designated right and left wings, commanded by Major Marcus A. Reno and Captain F. W. Benteen. Each wing was subdivided into two battalions of three troops each. After the first day the following was the habitual order of march; one battalion was advance-guard, one was rear-guard, and one marched on each flank of the train. General Custer, with one troop of the advance-guard, went ahead and selected the route for the train and the camping places at the end of the day's march. The other two troops of the advance-guard reported at headquarters for pioneer or fatigue duty, to build bridges and creek crossings. The rear-guard kept behind everything; when it came up to a wagon stalled in the mire, it helped to put the wagon forward. The battalions on the flanks were to keep within five hundred yards of the trail and not to get more than half a mile in advance or rear of the train. To avoid dismounting any oftener than necessary, the march was conducted as follows: One troop marched until about half a mile in advance of the train, when it was dismounted, the horses unbitted and allowed to graze until the train had passed and was about half a mile in advance of it, when it took up the march again; each of the other two troops would conduct their march in the same manner, so that two troops would be alongside the train all the time. If the country was much broken, a half dozen flankers were thrown out to guard against surprise. The flanks regulated their march so as to keep abreast of their troop. The pack-animals and beef herd were driven alongside the train by the packers and herders.

One wagon was assigned to each troop, and transported five days' rations and forage and the mess kit of the troop; also the mess kit, tents, and baggage of the troop officers and ten days' supplies for the officers' mess. The men were armed with the carbine and revolvers; no one, not even the officer of the day, carried the saber. Each troop horse carried, in addition to the rider, between eighty and ninety pounds. This additional weight included all equipments and about one hundred rounds of ammunition. The wagon-train consisted in all of about one hundred and fifty wheeled vehicles. In it were carried thirty days' supplies of

1. The signal to take down tents and break camp.

forage and rations (excepting beef), and two hundred rounds of ammunition per man. The two-horse wagons, hired by contract, carried from fifteen hundred to two thousand pounds. The six-mule government wagons carried from three to five thousand pounds, depending on the size and condition of the mules. The Gatling guns were each hauled by four condemned cavalry horses and marched in advanced of the train. Two light wagons, loaded with axes, shovels, pick-axes and some pine boards and scantling, sufficient for a short bridge, accompanied the "pioneer" troops. The "crossings," as they are termed, were often very tedious and would frequently delay the trains several hours. During this time the cavalry horses were unbitted and grazed, the men holding the reins. Those men not on duty at the crossing slept, or collected in groups to spin yarns and take a whiff at their "dingy dudeens." The officers usually collected near the crossing to watch progress, and passed the time in conversation and playing practical jokes. About noon the "strikers," who carried the haversacks, were called, and the different messes had their luncheon, sometimes separately, sometimes clubbing together. When the haversacks were opened, the horses usually stopped grazing and put their noses near their riders' faces and asked very plainly to share the hardtack; if their polite request did not receive attention they would paw the ground, or even strike their riders. The old soldier was generally willing to share with his beast.

The length of the day's march, varying from ten to forty miles, was determined in a great measure, by the difficulties or obstacles encountered, by wood, water, and grass, and by the distance in advance where such advantages were likely to be found. If, about two or three o'clock in the afternoon, a column of smoke was seen in the direction of the trail and a mile or two in advance, it was a pretty sure indication that a camp had been selected. The cavalry, excepting the rear-guard, would then cut loose from the train and go directly to camp. The rear-guard would send details to collect fuel and unpack their wagons. The adjutant showed the wing commanders the general direction their lines of tents were to run, and the latter then directed the battalion or troop commanders to their camping places. Generally one flank of each line would rest near the creek. The general form of the camp was that of a parallelogram. The wings camped on the long sides facing each other, and the headquarters and guard were located at one end nearest to the creek; the wagon-train was parked to close the other end and was guarded by the infantry battalion. The troops, as they arrived at their places, were formed in line, facing inward, dismounted, unsaddled, and, if the weather was hot and the sun shining, the men rubbed the horses' backs until dry. After this the horses were sent to water and put out to graze, with side-lines and lariats, under charge of the stable-guard, consisting of one non-commissioned officer and three or six privates. The men of the troop then collected fuel, sometimes wood, often a mile or more distant from the camp; sometimes "buffalo chips." The main guard, consisting usually of four or five non-commissioned officers and twelve or fifteen privates, reported mounted at headquarters, and were directed to take posts on prominent points overlooking the camp and surrounding country, to guard against surprise. Each post consisted of one non-commissioned officer and three privates. The officer of the day, in addition to his ordinary duties in camp, had charge of the safety of the cavalry herds. Sometimes this latter duty was performed by an officer

designed as "Officer of the Herd." To preserve the grazing in the immediate vicinity of the camp for evening and night grazing, all horses were required to be outside the camp limits until retreat. When the train arrived, the headquarters and troop wagons went directly to the camping place of their respective commands. The officers' baggage and tents were unloaded first; then the wagons went near the place where the troop kitchen was to be located, always on that flank of the troop farthest from headquarters. The teamsters unharnessed their mules and put them out to graze. The old stable guard reported to the troop commander for fatigue duty to put up the officers' tents and collect fuel for their mess. The troop officers' tents were usually placed twenty-five yards in rear of the line of men's tents and facing toward them. Their cook or mess tent was placed about ten or fifteen yards further to the rear. The "striker" made down the beds and arranged the "furniture," so to speak, which generally consisted of a camp-stool, tin wash-basin and a looking-glass. The men put up their tents soon after caring for their horses. The fronts of their tents were placed on a line established by stretching a picket-rope. The first sergeant's was on that flank of the line nearest to the headquarters. The horse equipments were placed on a line three yards in front of the tents. The men were not prohibited from using their saddles as pillows. A trench was dug for the mess fire, and the grass was burned around it for several yards to prevent prairie fires. After this the cooks busied themselves preparing supper. Beef was issued soon after the wagon-train came in, and the necessary number of beeves were butchered for the next day's issue; this was hauled in the wagons. Stable call was sounded about an hour before sunset. The men of each troop were formed on the parade and marked to the horse herds by the first sergeant. Each man went to his own horse, took off the sidelines and fastened them around the horse's neck, then pulled the picket pin, coiled the lariat, noosed the end fastened to the head halter around the horse's muzzle, mounted, and assembled in line at a place indicated by the first sergeant. The troop was then marched to the watering-place, which was usually selected with great care because of the boggy banks and miry beds of the prairie streams. After watering, the horses were lariated outside but in the immediate vicinity of the camp. The ground directed in rear of the troop belonged to it, and was jealously guarded by those concerned against encroachment by others. After lariating their horses, the men got their curry combs, brushes and nose-bags, and went to the troop wagon, where the quartermaster-sergeant and farrier measured, with tin cups, the forage to each man, each watching jealously that he got as much for his horse as those before him. He then went at once to feed and groom his horse. The officer whose duty it was to attend stables and the first sergeant superintended the grooming, examining each horse's back and feet carefully to see if they were all right. When a horse's back got sore through the carelessness of the rider, the man would generally be compelled to lead his horse until the sore was well. Immediately after stables, the cooks announced in a loud tone "supper." Then men with haversack and tin cup went to the mess fire and got their hardtack, meat, and coffee. If game had been killed the men did a little extra cooking themselves.

The troop officers' mess kits consisted of a sheet-iron cooking stove, an iron kettle, stewing, frying, baking, and dish pans; a small Dutch oven, a camp-kettle, a mess-chest holding tableware for four persons, and a small folding-table. The

table in fair weather was spread in the open air. The early part of the meal was a matter of business, but after the substantials were stowed away, the delicacies were eaten more leisurely and time found for conversation. After supper the pipes were lighted, and the officers, if the weather was cold, went to the windward side of the camp-fire. Each man as he took his place was sure to poke or kick the fire, turn his back, hitch up his coat-tail, and fold his hands behind him.

Retreat was sounded a little after sunset and the roll was called, as much to insure the men having their equipments in place as to secure their presence, for it was not often we were near enough to any attraction to call the men away. (In 1876 there was not a ranch west of Bismarck, Dakota, nor east of Bozeman, Montana.) The stable guards began their tours of duty at this time. The non-commissioned officer reported to the troop commander for instructions for the night; these usually designated whether the horses were to be tied to the picket line or kept out to graze, and included special instructions for the care of sick or weak horses. At dusk all horses were brought within the limits of the camp. The picket-line was stretched over three wagons in front of the men's tents, or three posts were used when remaining in camp over a day.

During the evening the men grouped about the fires and sang songs and spun yarns until "taps." The cooks prepared the breakfast, which usually consisted of hard bread, bacon and coffee. If beans or fresh meat were to be cooked, the food was put into the Dutch oven or camp-kettles, which were placed in the fire trench, covered over with hot ashes and coals, and a fire built over them. If the wind blew hard all fires were extinguished to prevent prairie fires. The cooks were called an hour or an hour and a half before reveille. At the first call for reveille, usually 4:20 A. M., the stable guard awakened the occupants of each tent and the officer whose duty it was to attend the roll-call. Stable call followed reveille and was superintended by an officer. This occupied about three-quarters of an hour. Two hours after reveille the command would be on the march. Of course there were incidents that occasionally relieved the monotony.

Antelope were very plentiful, and the men were encouraged by troop commanders to hunt. General Custer has a number of stag-hounds, which amused themselves and the command in their futile attempts to catch them. One morning they started up a large buck near where the column was marching; Lieutenant Hare immediately followed the hounds, passed them, drew his revolver, and shot the buck. Nothing of special interest occurred until the 27th of May, when we came to the Bad Lands of the Little Missouri River. On the 30th General Custer was sent with four troops to make a scout up the Little Missouri, for about twenty miles. He returned the same day, without having discovered any recent "Indian signs." On the 31st we crossed the Little Missouri without difficulty. On the 1st and 2nd of June we were obliged to remain in camp on account of a snowstorm.

We remained in camp on the Powder River for three days. General Terry went to the Yellowstone to communicate with the supply steamer *Far West,* which was at the mouth of the Powder River. He also went up the Yellowstone to communicate with General Gibbon's command, known as the "Montana Column," composed of four troops of the 2nd Cavalry and several companies of the 7th Infantry. Before General Terry left it was given out that the 7th Cavalry would be sent to scout up the Powder River, while the wagon train, escorted by the infantry, would be sent

to establish a supply camp at the mouth of the Powder.

Eleven pack-mules, saddles and aparejos were issued to each troop for this scout. This was a new departure; neither officers, men, nor mules had had any experience with this method of transportation. There were a few "packers" (civilian employes) to give instructions. Short, compactly built mules, the best for the purpose, were selected from the teams. A non-commisisoned officer and four men of each troop were detailed for packers. After some instruction had been given by the professionals, especially how to tie the "diamond hitch" we concluded to make our maiden attempt by packing two empty water casks. The mule was blinded and he submitted, with some uneasiness, to the packing. We supposed the packs were securely fastened and did not anticipate any trouble; but it is always the unexpected that happens with a mule. The blind was lifted; the mule gave a startled look first to one side, then to the other, at the two casks bandaged to his sides. He jumped to one side, causing to rattle a bung-plug that had fallen inside one of the casks. This startled him still more, and with head and tail high in the air he jumped again. He snorted and brayed, bucked and kicked, until the casks fell off. One was fastened to the saddle by the sling-rope. He now began to run, braying and making such a "rumpus" that the camp turned out as spectators. The affair excited serious concern lest all the animals in the camp would be stampeded. When the cask was loose we got him back and made a second attempt with two sacks of grain. These he soon bucked off and then regaled himself with the spilt grain. As a final effort we concluded to try the aparejo, and pack two boxes of ammunition. This done, the mule walked off with as little concern as if he had been a pack-mule all his life.

General Terry having returned, orders were issued on the 10th for the right wing, six troops, under Major Reno, to make a scout up the Powder, provided with twelve days' rations.

The left wing was ordered to turn over all forage and rations; also the pack-mules, except four to each troop. Major Reno left at 9 P. M. and the next day the rest of the command marched to the mouth of the Powder. My troop was rear-guard, and at times we were over three miles in rear of the wagon-train waiting on the packers, for we had taken this opportunity to give them practical instruction.

Up to this time we had not seen an Indian, nor any recent signs of them, except one small trail of perhaps a half dozen tepees, evidently of a party of agency Indians on their way to join the hostile camps. The buffalo had all gone west; other game was scarce and wild. The indications were that the Indians were west of the Powder, and information from General Gibbon placed them south of the Yellowstone. Some of the officers of the right wing before they left expressed their belief that we would not find any Indians, and were sanguine that we would all get home by the middle of August.

Major Reno was ordered to scout to the forks of the Powder, then across to Mispah Creek, follow it down to near its confluence with the Powder; then across over to Pumpkin Creek, follow it down to the Tongue River, scout up that stream, and then rejoin the regiment at the mouth of the Tongue by the time his supplies were exhausted; unless, in the mean time, he should make some discovery that made it necessary to return sooner to make preparations for pursuit. A supply depot was established at the mouth of the Powder, guarded by the infantry, at which the wagon-train was left.

General Terry, with his staff and some supplies, took passage on the supply steamer "Far West," and went up to the mouth of the Tongue. General Custer, with the left wing, marched to the mouth of the Tongue, where we remained until the 19th waiting tidings from Reno's scout. The grounds where we camped had been occupied by the Indians the previous winter. (Miles City, Montana, was first built on the site of this camp.) The rude shelters for their ponies, built of driftwood, were still standing and furnished fuel for our camp-fires. A number of their dead, placed on scaffolds, or tied to the branches of trees, were disturbed and robbed of their trinkets. Several persons rode about exhibiting trinkets with as much gusto as if they were trophies of their valor, and showed no more concern for their desecration than if they had won them at a raffle. Ten days later I saw the bodies of these same persons dead, naked and mutilated.

On the 19th of June tidings came from Reno that he had found a large trail that led up the Rosebud River. The particulars were not generally known. The camp was full of rumors; credulity was raised to the highest pitch, and we were filled with anxiety and curiosity until we reached Reno's command, and learned the details of their discoveries. They had found a large trail on the Tongue River, and had followed it up the Rosebud about forty miles. The number of lodges in the deserted villages was estimated by the number of camp-fires remaining to be about three hundred and fifty. The indications were that the trail was about three weeks old. No Indians had been seen, nor any recent signs. It is not probable that Reno's movements were known to the Indians, for on the very day Reno reached his farthest point up the Rosebud, the battle of the Rosebud, between General Crook's forces and the Indians, was fought. The two commands were then not more than forty miles apart, but neither knew nor even suspected the proximity of the other.

We reached the mouth of the Rosebud about noon on the 21st, and began preparations for the march and the battle of the Little Big Horn.

There were a number of Sioux Indians who never went to an agency except to visit friends and relatives. They camped in and roamed about the Buffalo country. Their camp was the rendezvous for the agency Indians when they went out for their annual hunts for meat and robes. They were known as the "Hostiles" and comprised representatives from all the different tribes of the Sioux nation. Many of them were renegade outlaws from the agencies. In their visits to the agencies they were usually arrogant and fomenters of discord. Depredations had been made upon the commerce to the Black Hills, and a number of lives taken by them or by others, for which they were blamed. The authorities at Washington had determined to compel these Indians to reside at the agencies—hence the Sioux War. Sitting Bull, a Uncpapa Sioux Indian, was the chief of the hostile camp; he had about sixty lodges of followers on whom he could at all times depend. He was the host of the Hostiles, and as such received and entertained their visitors. These visitors gave him many presents, and he was thus enabled to make many presents in return. All visitors paid tribute to him, so he gave liberally to the most influential, the chiefs, i. e., he "put it where it would do the most good." In this way he became known as the chief of the hostile Indian camp, and the camp was generally known as "Sitting Bull's Camp." Sitting Bull was a heavy-set, muscular man, about five feet eight inches in stature, and at the time of the battle of the Little Big Horn was forty-two years

of age. He was the autocrat of the camp —chiefly because he was the host. In council his views had great weight, because he was known as a great medicine man. He was a chief, but not a warrior chief. In the war councils he had a voice and vote the same as any other chief. A short time previous to the battle he had "made medicine," had predicted that the soldiers would attack them and that the soldiers would all be killed. He took no active part in the battle, but, as was his custom in time of danger, remained in the village "making medicine." Personally he was regarded as a great coward and a very great liar, "a man with a big head and a little heart." The command passed the remains of a "Sun-dance" lodge which took place about June 5 and to which I shall again refer. This was always a ceremony of great importance to the Indians. It ranks in interest and importance to the Indians with the graduation or commencement exercises of our civilized communities. In anticipation of this event the Indians from the agencies had assembled at this camp.

Major James McLaughlin, United States Indian Agent, stationed at the Devil's Lake Agency, Dakota, from 1870 to 1881, and at Standing Rock Agency, Dakota, from 1881 to the present time, has made it a point to get estimates of the number of Indians at the hostile camp at the time of the battle. In his opinion, and all who know him will accept it with confidence, about one-third of the whole Sioux nation, including the northern Cheyennes and Arapahoes, were present at the battle; he estimates the number present as between twelve and fifteen thousand; that one out of four is a low estimate in determining the number of warriors present; every male over fourteen years of age may be considered a warrior in a general fight such as was the battle of the Little Big Horn; also, considering the extra hazards of the hunt and expected battle, fewer squaws would accompany the recruits from the agencies. The minimum strength of their fighting men may then be put down as between twenty-five hundred and three thousand. Information was dispatched from General Sheridan that from one agency alone about eighteen hundred lodges had set out to join the hostile camp; but that information did not reach General Terry until several days after the battle. The principal warrior chiefs of the hostile Indians were: "Gall," "Crow King," and "Black Moon," Uncpapa Sioux; "Low Dog," "Crazy Horse," and "Big Road," Ogallala Sioux; "Spotted Eagle," Sans-Arc Sioux; "Hump" of the Minneconjous, and "White Bull" and "Little Horse," of the Cheyennes. To these belong the chief honors of conducting the battle, of whom, however, "Gall," "Crow King," and "Crazy Horse" were the ruling spirits.

Generals Terry, Gibbon and Custer had a conference on board the steamer "Far West." It was decided that the 7th Cavalry, under General Custer, should follow the trail discovered by Reno. "Officers' call" was sounded as soon as the conference had concluded. Upon assembling, General Custer gave us our orders. We were to transport on our pack-mules fifteen days' rations of hard bread, coffee and sugar; twelve days' rations of bacon and fifty rounds of carbine ammunition per man. Each man was to be supplied with 100 rounds of carbine and 24 rounds of pistol ammunition, to be carried on his person and in his saddle-bags. Each man was to carry on his horse twelve pounds of oats. The pack-mules sent out with Reno's command were badly used up, and promised seriously to embarrass the expedition. General Custer recommended that some extra forage be carried on the pack-mules. In endeavoring to carry out this

recommendation some troop commanders foresaw the difficulties, and told the general that some of the mules would certainly break down, especial if the extra forage was packed. He replied in an excited manner, quite unusual with him: "Well, gentlemen, you may carry what supplies you please; you will be held responsible for your companies. The extra forage was only a suggestion, but this fact bear in mind, we will follow the trail for fifteen days unless we catch them before that time expires, no matter how far it may take us from our base of supplies; we may not see the supply steamer again"; and, turning as he was about to enter his tent, he added, "You had better carry along an extra supply of salt; we may have to live on horse meat before we get through." He was taken at his word, and an extra supply of salt was carried. "Battalion" and "wing" organizations were broken up, and troop commanders were responsible only to General Custer. His written instructions were as follows:

Camp at Mouth of Rosebud River, Montana Territory, June 22, 1876.

Lieutenant-Colonel Custer, 7th Cavalry.

Colonel: The Brigadier-General Commanding directs that, as soon as your regiment can be made ready for the march, you will proceed up the Roesbud in pursuit of the Indians whose trail was discovered by Major Reno a few days since. It is, of course, impossible to give you any definite instructions in regard to this movement, and were it not impossible to do so the Department Commander places too much confidence in your zeal, energy and ability to wish to impose upon you precise orders which might hamper your action when nearly in contact with the enemy. He will, however, indicate to you his own views of what your action should be, and he desires that you should conform to them unless you shall see sufficient reason for departing from them. He thinks that you should proceed up the Rosebud until you ascertain definitely the direction in which the trail above spoken of leads. Should it be found (as it appears almost certain that it will be found) to turn towards the Little Horn, he thinks that you should still proceed southward, perhaps as far as the headquarters of the Tongue, and then turn towards the Little Horn, feeling constantly, however, to your left, so as to preclude the possibility of the escape of the Indians to the south or southeast by passing around your left flank. The column of Colonel Gibbon is now in motion for the mouth of the Big Horn. As soon as it reaches that point it will cross the Yellowstone and move up at least as far as the forks of the Big and Little Horns. Of course its future movements must be controlled by circumstances as they arise, but it is hoped that the Indians, if upon the Little Horn, may be so nearly inclosed by the two columns that their escape will be impossible.

The Department Commander desires that on your way up the Rosebud you should thoroughly examine the upper part of Tulloch's Creek, and that you should endeavor to send a scout through to Colonel Gibbon's column, with information of the result of your examination. The lower part of this creek will be examined by a detachment from Colonel Gibbon's command. The supply steamer will be pushed up the Big Horn as far as the forks if the river is found to be navigable for that distance, and the Department Commander, who will accompany the column of Colonel Gibbon, desires you to report to him there not later than the expiration of the time for which your troops are rationed, unless in the meantime you receive further orders.

Very respectfully, your obedient servant,
E. W. Smith,
Captain, 18th Infantry,
Acting Assistant Adjutant-General.

These instructions are explicit and fixed the location of the Indians very accurately. Of course, as soon as it was determined that we were to go out, nearly every one took time to write letters home, but I doubt very much if there were many of a cheerful nature. Some officers made their wills; others gave verbal instructions as to the disposition of personal property and distribution of mementos; they seemed to have a presentiment of their fate.

At twelve o'clock, noon, on the 22nd

of June, the "Forward" was sounded and the regiment marched out of camp in column of fours, each troop followed by its pack-mules. Generals Terry, Gibbon and Custer stationed themselves near our line of march and reviewed the regiment. General Terry had a pleasant word for each officer as he returned the salute. Our pack-trains proved troublesome at the start, as the cargoes began falling off before we got out of camp, and during all that day the mules straggled badly. After that day, however, they were placed under the charge of an officer, who was directed to report at the end of each day's march the order of merit of the efficiency of the troop packers. Doubtless General Custer had some ulterior design in this. It is quite probable that if he had had occasion to detach troops requiring rapid marching, he would have selected those troops whose packers had the best records. At all events the efficiency was much increased, and after we struck the Indian trail the pack-trains kept well closed.

We went into camp about 4 p. m., having marched twelve miles. After sunset "officers' call" was sounded, and we assembled at General Custer's bivouac and squatted in groups about the general's bed. It was not a cheerful assemblage; everybody seemed to be in a serious mood and the little conversation carried on, before all had arrived, was in undertones. When all had assembled the general said that until further orders trumpet calls would not be sounded except in an emergency; the marches would begin at 5 a. m. sharp; the troop commanders were all experienced officers and knew well enough what to do, and when to do what was necessary for their troops; there were two things that would be regulated from his headquarters, i. e., when to move out of and when to go into camp. All other details, such as reveille, stables, watering, halting, grazing, etc., on the march would be left to the judgment and discretion of the troop commanders; they were to keep within supporting distance of each other, not to get ahead of the scouts, or very far to the rear of the column. He took particular pains to impress upon the officers his reliance upon their judgment, discretion and loyalty. He thought, judging from the number of lodge-fires reported by Reno, that we might meet at least a thousand warriors; there might be enough young men from the agencies, visiting their hostile friends, to make a total of fifteen hundred. He had consulted the reports of the Commissioner of Indian Affairs as to the probable number of "Hostiles" (those who had persistently refused to live or enroll themselves at the Indian agencies), and he was confident if any reliance was to be placed upon those reports, that there would not be an opposing force of more than fifteen hundred. General Terry had offered him the additional force of the battalion of the 2nd Cavalry, but had declined it, because he felt sure that the 7th Cavalry could whip any force that would be able to combine against him; that if the regiment could not, no other regiment in the service could; if they could whip the regiment, they would be able to defeat a much larger force, or in other words, the reinforcement of this battalion could not save us from defeat. With the regiment acting alone there would be harmony, but another organization would be sure to cause jealousy. He had declined the offer of the gatling guns for the reason that they might hamper our movements or march at a critical moment, because of the difficult nature of the country through which we would march. The marches would be from twenty-five to thirty miles a day. Troop officers were cautioned to husband their

rations and the strength of their mules and horses, as we might be out for a great deal longer time than that for which we were rationed, as he intended to follow the trail until we could get the Indians, even if it took us to the Indian agencies on the Missouri River or in Nebraska. All officers were requested to make to him, then or at any time, any suggestions they thought fit.

This "talk" of his, as we called it, was considered at the time as something extraordinary for General Custer, for it was not his habit to unbosom himself to his officers. In it he showed a lack of self-confidence, a reliance on somebody else; there was an indefinable something that was not Custer. His manner and tone, usually brusque and aggressive, or somewhat rasping, was on this occasion conciliating and subdued. There was something akin to an appeal, as if depressed, that made a deep impression on all present. We compared watches to get the official time, and separated to attend to our various duties. Lieutenants McIntosh, Wallace[1] and myself walked to our bivouac, for some distance, in silence, when Wallace remarked: "Godfrey, I believe General Custer is going to be killed." "Why, Wallace," I replied, "What makes you think so?" "Because," said he, "I have never heard Custer talk in that way before."

I went to my troop and gave orders what time the "silent" reveille should be and as to other details for the morning preparations; also the following directions in case of a night attack. The stable guard, packers and cooks were to go out at once to the horses and mules to quiet and guard them; the other men were to go at once to a designated rendezvous and await orders; no man should fire a shot until he received orders from an officer to do so. When they retired for the night they should put their arms and equipments where they could get them without leaving their beds. I then went through the herd to satisfy myself as to the security of the animals. During the performance of this duty I came to the bivouac of the Indian scouts. "Mitch" Bouyer, the half-breed interpreter, "Bloody Knife," the chief of the Ree scouts, "Half-Yellow-Face," the chief of the Crow scouts, and others were having a "talk." I observed them for a few minutes, when Bouyer turned toward me, apparently at the suggestion of "Half-Yellow-Face," and said, "Have you ever fought against these Sioux?" "Yes," I replied. Then he asked, "Well, how many do you expect to find?" I answered, "It is said we may find between one thousand and fifteen hundred. "Well, do you think we can find that many?" "Oh, yes, I guess so." After he had interpreted our conversation, he said to me with a good deal of emphasis, "Well, I can tell you we are going to have a ——— big fight."

At five o'clock sharp, on the morning of the 23rd, General Custer mounted and started up the Rosebud, followed by two sergeants, one carrying the regimental standard, and the other his personal headquarters flag, the same kind of flag as used while commanding his cavalry during the Rebellion. This was the signal for the command to mount and take up the march. Eight miles out we came to the first of the Indian camping places. It certainly indicated a large village and numerous population. There were a great many "wickiups" (bushes stuck in the ground with the tops drawn together, over which they placed the canvas or blankets). These we supposed at the time were for the dogs, but subsequent events developed the fact that they were the temporary shelters of the transients from the agencies. During

1. Killed at the battle of Wounded Knee, Dec. 29, 1890.

the day we passed through three of these camping places and made halts at each one. Everybody was busy studying the age of pony droppings and tracks and lodge trails, and endeavoring to determine the number of lodges. These points were the all-absorbing topics of conversation. We went into camp about five o'clock, having marched about thirty-three miles.

June 24th we passed a great many camping-places, all appearing to be of nearly the same strength. One would naturally suppose these were the successive camping-places of the same village, when in fact they were the continuous camps of the several bands. The fact that they appeared to be of nearly the same age, that is, having been made at the same time, did not impress us then. We passed through one much larger than any of the others. The grass for a considerable distance around it had been cropped close, indicating that large herds had been grazed there. The frame of a large "Sun-dance" lodge was standing, and in it we found the scalp of a white man, probably one of General Gibbon's command who had been killed some weeks previously. It was whilst here that the Indians from the agencies had joined the Hostiles' camp. The command halted here and "officers' call" was sounded. Upon assembling we were informed that our Crow scouts, who had been very active and efficient, had discovered fresh signs, the tracks of three or four ponies and of one Indian on foot. At this time a stiff southerly breeze was blowing; as we were about to separate, the General's headquarters flag was blown down, falling toward our rear. Being near the flag, I picked it up and stuck the flag in the ground, but it fell again to the rear. I then bored the staff into the ground where it would have the support of a sage-bush. This circumstance made no impression on me at the time, but after the battle an officer asked me if I remembered the incident; he had observed it, and regarded the fact of its falling to the rear as a bad omen, and felt sure we would suffer a defeat.

The march during the day was tedious. We had many long halts so as not to get ahead of the scouts, who seemed to be doing their work thoroughly, giving special attention to the right, toward Tulloch's Creek, the valley of which was in general view from the divide. Once or twice signal smokes were reported in that direction. The weather was dry and had been for some time, consequently the trail was very dusty. The troops were required to march on separate trails so that the dust clouds would not rise so high. The valley was heavily marked with lodge-pole trails and pony tracks, showing that immense herds of ponies had been driven over it. About sundown we went into camp under the cover of a bluff, so as to hide the command as much as possible. We had marched about twenty-eight miles. The fires were ordered to be put out as soon as supper was over and we were to be in readiness to march again at 11:30 P. M. Lieutenant Hare and myself lay down about 9:30 to take a nap; when comfortably fixed we heard some one say, "He's over there by that tree." As that described our locality pretty well, I called out to know what was wanted, and the reply came: "The General's compliments and wants to see all the officers at headquarters immediately." So we gave up our much-needed rest and groped our way through horse herds, over sleeping men, and through thickets of bushes trying to find headquarters. No one could tell us, and as all fires and lights were out we could not keep our bearings. We finally

espied a solitary candle light, toward which we traveled, and found most of the officers assembled at the General's bivouac. The General said that the trail led over the divide to the Little Big Horn; the march would be taken up at once, as he was anxious to get as near the divide as possible before daylight, where the command would be concealed during the day, and give ample time for the country to be studied, to locate the village and to make plans for the attack on the 26th. We then returned to our troops, except Lieutenant Hare, who was put on duty with the scouts. Because of the dust it was impossible to see any distance, and the rattle of equipments and clattering of the horses' feet made it difficult to hear distinctly beyond our immediate surroundings. We could not see the trail, and we could only follow it by keeping in the dust cloud. The night was very calm, but occasionally a slight breeze would waft the cloud and disconcert our bearings; then we were obliged to halt to catch a sound from those in advance, sometimes whistling or hallooing, and getting a response we would start forward again. Finally troopers were put ahead, away from the noise of our column, and where they could hear the noise of those in front. A little after 2 A. M., June 25, the command was halted to await further tidings from the scouts; we had marched about ten miles. Part of the command unsaddled to rest the horses. After daylight some coffee was made, but it was almost impossible to drink it; the water was so alkaline that the horses refused to drink it. Some time before eight o'clock, General Custer rode bareback to the several troops and gave orders to be ready to march at eight o'clock, and gave information that scouts had discovered the locality of the Indian villages or camps in the valley of the Little Big Horn, about twelve or fifteen miles beyond the divide. Just before setting out on the march I went to where General Custer's bivouac was. The General, "Bloody Knife," and several Ree scouts and a half-breed interpreter were squatted in a circle having a "talk," after the Indian fashion. The General wore a serious expression and was apparently abstracted. The scouts were doing the talking and seemed nervous and disturbed. Finally "Bloody Knife" made a remark that recalled the General from his reverie, and he asked in his usual quick, brusque manner, "What's that he says?" The interpreter replied, "He says we'll find enough Sioux to keep us fighting two or three days." The General smiled and remarked, "I guess we'll get through with them in one day."

We started promptly at eight o'clock and marched uninterruptedly until 10:30 A. M. when we halted in a ravine and were ordered to preserve quiet, keep concealed, and not to do anything that would be likely to reveal our presence to the enemy; we had marched about ten miles.

It is a rare occurrence in Indian warfare that gives a commander the opportunity to reconnoiter the enemy's position in daylight. This is particularly true if the Indians have a knowledge of the presence of troops in the country. When following an Indian trail the "signs" indicate the length of time elapsed since the presence of the Indians. When the "signs" indicate a "hot trail," i. e., near approach, the commander judges his distance and by forced march, usually in the night-time, tries to reach the Indian village at night and make his disposition for a surprise attack at daylight. At all events his attack must be made with celerity, and generally without other knowledge of the numbers of the opposing force than that dis-

covered or conjectured while following the trail. The dispositions for the attack may be said to be "made in the dark," and successful surprise to depend upon luck. If the advance to the attack be made in daylight it is next to impossible that a near approach can be made without discovery. In all our previous experiences when the immediate presence of the troops was once known to them, the warriors swarmed to the attack, and resorted to all kinds of ruses to mislead the troops, to delay the advance toward their camp or village, while the squaws and children secured what personal effects they could, drove off the pony herd, and by flight put themselves beyond danger, and then scattering made successful pursuit next to impossible. In civilized warefare the hostile forces may confront each other for hours, days, or weeks, and the battle may be conducted with a tolerable knowledge of the numbers, position, etc., of each other. A full knowledge of the immediate presence of the enemy does not imply immediate attack. In Indian warfare the rule is "touch and go." These remarks are made because the firebrand nature of Indian warfare is not generally understood. In meditating upon the preliminaries of an Indian battle, old soldiers who have participated only in the battles of the Rebellion are apt to draw upon their own experiences for comparison, when there is no comparison.

The Little Big Horn River, or the "Greasy Grass" as it is known to the Indians, is a rapid mountain stream, from twenty to forty yards wide, with pebbled bottom, but abrupt, soft banks. The water at the ordinary stage is from two to five feet in depth, depending upon the width of the channel. The general direction of its course is northeasterly down to the Little Big Horn battlefield, where it trends northwesterly to its confluence with the Big Horn River. The other topographical features of the country which concern us in this narrative may be briefly described as follows: Between the Little Big Horn and Big Horn Rivers is a plateau of undulating prairie; between the Little Big Horn and the Rosebud are the Little Chetish or Wolf Mountains. By this it must not be misunderstood as a rocky upheaval chain or spur of mountains, but it is a rough, broken country of considerable elevation, of high precipitous hills and deep narrow gulches. The command had followed the trail up a branch of the Rosebud to within, say, a mile of the summit of these mountains, which form the "divide." Not many miles to our right was the divide between the Little Big Horn and Tulloch's Fork. The creek that drained the watershed to our right and front is now called "Sundance" or Benteen's Creek. The trail, very tortuous, and sometimes dangerous, followed down the bed and valley of this creek, which at that time was dry for the greater part of its length. It was from the divide between the Little Big Horn and the Rosebud that the scouts had discovered the smoke rising above the village, and the pony herds grazing in the valley of the Little Big Horn, somewhere about twelve or fifteen miles away. It was to their point of view that General Custer had gone while the column was halted in the ravine. It was impossible for him to discover more of the enemy than had already been reported by the scouts. In consequence of the high bluffs which screened the village, it was not possible in following the trail to discover more. Nor was there a point of observation near the trail from which further discoveries could be made until the battle was at hand.

It was well known to the Indians that the troops were in the field, and a battle was fully expected by them; but the close proximity of our column was not known to them until the morning of the day of the battle. Several young men had left the hostile camp on that morning to go to one of the agencies in Nebraska. They saw the dust made by the column of troops; some of their number returned to the village and gave warning that the troops were coming, so the attack was not a surprise. For two or three days their camp had been pitched on the site where they were attacked. The place was not selected with the view to making that the battle field of the campaign, but whoever was in the van in their march thought it a good place to camp, put up his tepee, and the others as they arrived followed his example. It is customary among the Indians to camp by bands. The bands usually camp some distance apart, and Indians of the number then together would occupy a territory of several miles along the river valley, and not necessarily within supporting distance of each other. But in view of the possible fulfilment of Sitting Bull's prophecy the village had massed.

Our officers had generally collected in groups and discussed the situation. Some sought solitude and sleep, or meditation. The Ree Scouts, who had not been very active for the past day or two, were together and their "medicine man" was anointing them and invoking the Great Spirit to protect them from the Sioux. They seemed to have become satisfied that we were going to find more Sioux than we could well take care of. Captain Yate's troop had lost one of its packs of hard bread during the night march from our last halting-place on the 24th. He had sent a detail back on the trail to recover it. Captain Keogh came to where a group of officers were, and said this detail had returned and reported that when near the pack they discovered an Indian opening one of the boxes of hard bread with his tomahawk, and that as soon as the Indian saw the soldiers he galloped away to the hills out of range and then moved along leisurely. This information was taken to the General at once by his brother, Colonel Tom Custer. The General came back and had "officers' call" sounded. He recounted Captain Keogh's report, and also said that the scout had seen several Indians moving along the ridge overlooking the valley through which we had marched, as if observing our movements; he thought the Indians must have seen the dust made by the command. At all events our presence had been discovered and further concealment was unnecessary; that we would march at once to attack the village; that he had not intended to make the attack until the next morning, the 26th, but our discovery made it imperative to act at once, as delay would allow the village to scatter and escape. Troop commanders were ordered to make a detail of one non-commissioned officer and six men to accompany the pack; to inspect their troops and report as soon as they were ready to march; that the troops would take their places in the column of march in the order in which reports of readiness were received, and that the last one to report would escort the pack-train.

The inspections were quickly made and the column was soon en route. We crossed the dividing ridge between the Rosebud and Little Big Horn valleys a little before noon. Shortly afterward the regiment was divided into battalions. The advance battalion, under Major Reno, consisted of troop "M," Captain French; troop "A," Captain Moylan and

Lieutenant De Rudio; troop "G," Lieutenants McIntosh and Wallace; the Indian scouts under Lieutenants Varnum and Hare and the interpreter Girard; Lieutenant Hodgson was Acting Adjutant and Doctors De Wolf and Porter were the medical officers. The battalion under General Custer was composed of troop "I," Captain Keogh and Lieutenant Porter; troop "F," Captain Yates and Lieutenant Reily; troop "C," Captain Custer and Lieutenant Harrington; troop "E," Lieutenants Smith and Sturgis; troop "L," Lieutenants Calhoun and Crittenden; Lieutenant Cook was the Adjutant, and Dr. G. E. Lord was medical officer. The battalion under Captain Benteen consisted of troop "H," Captain Benteen and Lieutenant Gibson; troop "D," Captain Weir and Lieutenant Edgerly, and troop "K" Lieutenant Godfrey. The pack-train, Lieutenant Mathey in charge, was under the escort of troop "B," Captain McDougall.

Major Reno's battalion marched down a valley that developed into the small tributory to the Little Big Horn, now called "Sun-dance," or Benteen's Creek. The Indian trail followed the meanderings of this valley. Custer's column followed Reno's closely, and the pack-train followed their trail. Benteen's battalion was ordered to the left and front, to a line of high bluffs about three or four miles distant. Benteen was ordered if he saw anything to send word to Custer, but to pitch into anything he came across; if, when he arrived at the high bluffs, he could not see any enemy, he should continue his march to the next line of bluffs, and so on, until he could see the Little Big Horn Valley. He marched over a succession of rough, steep hills and deep valleys. The view from the point where the regiment was organized into battalions did not discover the difficult nature of the country, but as we advanced farther it became more and more difficult and more forbidding. Lieutenant Gibson was sent some distance in advance but saw no enemy, and so signaled the result of his reconnaissance to Benteen. The obstacles threw the battalion by degrees to the right until we came in sight of and not more than a mile from the trail. Many of our horses were greatly jaded by the climbing and descending, some getting far to the rear of the column. Benteen very wisely determined to follow the trail of the rest of the command, and we got into it just in advance of the pack-train. During this march on the left we could see occasionally the battalion under Custer, distinguished by the troop mounted on gray horses, marching at a rapid gait. Two or three times we heard loud cheering and also some few shots, but the occasion of these demonstrations is not known.

Some time after getting on the trail we came to a water-hole, or morass, at which a stream of running water had its source. Benteen halted the battalion. While watering we heard some firing in advance, and Weir became a little impatient at the delay of watering and started off with his troop, taking the advance, whereas his place in column was second. The rest of the battalion moved out very soon afterward and soon caught up with him. Just as we were leaving the water-hole the pack-train was arriving, and the poor thirsty mules plunged into the morass in spite of the efforts of the packers to prevent them, for they had not had water since the previous evening. We passed a burning tepee, fired presumably by our scouts, in which was the body of a warrior who had been killed in the battle with Crook's troops on the Rosebud on the 17th of June.

The battalions under Reno and Custer did not meet any Indians until Reno arrived at the burning tepee; here a few were seen. These Indians did not act as if surprised by the appearance of troops; they made no effort to delay the column, but simply kept far enough in advance to invite pursuit. Reno's command and the scouts followed them closely, until he received orders "to move forward at as rapid a gait as he thought prudent, and charge the village afterward, and the whole outfit would support him." The order was received when Reno was not very far from the Little Big Horn River. His battalion moved at a trot to the river, where Reno delayed about ten or fifteen minutes watering the horses and reforming the column on the left bank of the stream. Reno now sent word to Custer that he had everything in front of him and that the enemy was strong. Custer had moved off to the right, being separated from Reno by a line of high bluffs and the river. Reno moved forward in a column of fours about half a mile, then formed the battalion in line of battle across the valley with the scouts on the left; after advancing about a mile further he deployed the battalion as skirmishers. In the meantime the Hostiles, continually reinforced, fell back, firing occasionally but made no decided effort to check Reno's advance. The horses of two men became unmanageable and carried them into the Indian camp. The Indians now developed great force, opened a brisk fire, mounted, and made a dash toward the foot-hills on the left flank where the Ree scouts were. The scouts ignominiously fled, most of them abandoning the field altogether.

Reno, not seeing the "whole outfit" within supporting distance, did not obey his orders to charge the village, but dismounted his command to fight on foot. The movements of the Indians around the left flank and the flight of the scouts caused the left to fall back until the command was on the defensive in the timber and covered by the bank of the old river-bed. Reno's loss thus far was one wounded. The position was a strong one, well protected in front by the bank and fringe of timber, somewhat open in the rear, but sheltered by timber in the bottom. Those present differ in their estimates of the length of time the command remained in the bottom after they were attacked in force. Some say a "few minutes;" others, "about an hour." While Reno remained there his casualties were few. The Hostiles had him nearly surrounded, and there was some firing from the rear of the position by Indians on the opposite bank of the river. One man was killed close to where Reno was, and directly afterward Reno gave orders to those near him to "mount and get to the bluffs." This order was not generally heard or communicated; while those who did hear it were preparing to execute it, he countermanded the order, but soon afterward he repeated the same order, "to mount and get to the bluffs," and again it was not generally understood. Individuals, observing the preparations of those on the left, near Reno, informed their troop commanders, who then gave orders to mount. Owing to the noise of the firing and to the absorbed attention they were giving to the enemy, many did not know of the order until too late to accompany the command. Some remained concealed until the Indians left and then came out. Four others remained until night and then escaped. Reno's command left the bottom by troop organizations in column.

(To be Continued)

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THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

E. P. SLOAN

Bloomington Ill.

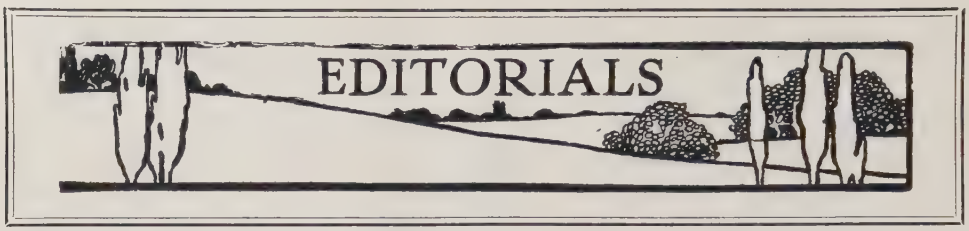
Volume XLVII CHICAGO, ILL., OCTOBER, 1925 Number Ten

PUBLISHED MONTHLY

MEDICAL RECORDER PUBLISHING COMPANY, 81 E. MADISON ST., CHICAGO, ILLINOIS

The Editors and publishers are not responsible for the views of authors expressed in these page

To Canada and Foreign Countries $2.50



MEDICAL DEPARTMENT — UNIVERSITY OF EDINBURGH

The following account of this year's graduation exercises of the medical branch of the Edinburgh University, sent to us by our correspondent in Edinburgh, P. J. Stirling Boyd, Esquire, is so interesting that we take pleasure in republishing it:

A Medical Graduation Ceremony in connection with Edinburgh University was held in the M'Ewan Hall this forenoon in the presence of a large company of students and friends, although it was remarkable to see a few vacant spaces in the hall on such an important occasion.

As on Wednesday at the Arts Graduation, the student section of the spectators was a fairly orderly one. There were, however, one or two enthusiastic demonstrations when well-known members of student circles walked forward to be capped. Mr. J. B. Colquhoun, president of the Union; Mr. R. Strang, president of the Athletic Club; and Mr. Hugh M'Vicker, captain of the Rugby XV, and an Irish internationalist, were given special ovations.

Mr. William John Ansan, Coldstream, M.B., Ch.B., who was awarded the Ettles Scholarship and Leslie Gold Medal as the most distinguished student of his year, was also greeted with loud applause.

Principal Sir Alfred Ewing presided, and the candidates were presented by Professor Lorraine Smith, Dean of the Faculty of Medicine.

After the ceremony, the students were addressed by the promoter, Professor George M. Robertson, who was interrupted on one or two occasions, but on the whole was accorded an attentive hearing.

At the outset the speaker described the graduation ceremony of a thousand years at Salerno, and said the Chancellor placed a crown of laurels on the brows of the successful graduates, placed a ring on their fingers, and then the Professors kissed the graduates. (Loud cries of "Oh" and "Bah.")

There were no lady medicals in these far-off days. (Laughter.)

Continuing, Professor Robertson said personality was described by some in poetical language as personal magnetism. By others it was regarded as a miraculous gift of divine origin, the gift of healing. They were assured on the testimony of good people, like bishops, that there were persons, quite unequipped with any medical knowledge, indeed one might correctly say unhampered by any medical knowledge, who worked miracles of healing.

Such gifted beings were called "Healers" in order to differentiate them from medical men fashioned of common clay, whose little learning had been laboriously acquired, and whose power of healing, unlike theirs, was subject to definite limitations. The difference in the methods employed by the healer and by the doctor was that which existed between magic and science. (Applause.)

Although there was no special Chair of Magic in Edinburgh, this important subject probably survived in one or an-

other of the existing Chairs. In the Faculty of Arts, the Chair of Natural Philosophy included much that would have been regarded at one time as magic.

Magic consisted not only in the performance of rites invoking occult agencies, not only in the employment of materials possessing supernatural power and virtue, but also in a certain habit or attitude of mind towards inexplicable phenomena.

Now, there existed today a curious and most amazing difference, in the way that people had of looking, on the one hand, at phenomena of a physical kind, and so on the other, at phenomena connected with the treatment of disease, a distinction actually fostered by the Church.

No educated person now believed that the applications of physics were magical. They merely illustrated the progressive unveiling of the forces of nature and their subjugation to the uses of mankind. But it was not so with regard to the employment of remedies in disease. The element of magic in this sphere had never disappeared. No theory of disease was too fantastic, no line of treatment too futile to be accepted even by the most cultured.

Suppose now that a patient desired treatment of a magical kind. He might go to a Christian Scientist or to a Spiritual Healer; he might consult a plausible charlatan; or he might seek the vendor of a secret nostrum. In many cases he would benefit; and why not?

The majority of symptoms passed away spontaneously; the treatment he received was mental, and therefore suited the symptoms exactly; mystery was invoked, and this appealed to the superstitious elements lying latent in the patient's mind; and lastly, the patient came with a child-like faith in the treatment for which he asks.

As honest seekers after truth, they must face these facts. Look at Christian Science and its incredible development in America. It was a very simple therapeutic system, from which diagnosis was excluded, and it employed one remedy. Painfully inadequate as it seemed to them, it had succeeded in founding cathedrals and in comforting millions. It had built seventy-four churches in this country and hundreds in America.

Would that some of the money thus subscribed by grateful patients had found its way into the empty coffers of this University! Why did they not receive this grateful help? Was it because they had converted healing into a cold science instead of leaving it an impressive mystery and a passionate faith? For it had passed through those phases.

Men and women hungered after the mystic and the wonderful; they were just big children in matters connected with illness; and their craving for miraculous cures would not cease till the progress of the science of medicine had rendered such cures superfluous.

Or the patient might consult a regular practitioner of medicine and what followed? Almost inevitably the doctor would prescribe certain vegetable or mineral products, and the patient would derive benefit from his prescription.

What distinguished the doctor from the healer was his undeviating rationalism. His recognition of the mental element in disease, whether as a cause, as a symptom, or as a cure, was deficient. He had a horror of introducing mystery into his treatment, even though his patients had not yet emerged from the darkness of superstition, and his practice would probably increase if they believed that the letter M.B. after his name indicated that he was a Bachelor of Magic.

It was not the alleviation of symptoms, nor in the treatment of minor ailments that medicine impressed us. It

was in its confident challenge to the diseases that killed that the science of medicine revealed its greatness. Witness the attack on cancer and the results just obtained by a graduate of the University.

What also could be more convincing, what more impressive, than the simple statement that during our life-time the death rate had fallen from 22 per thousand to 12, and that the expectation of life had risen from 40 years to 55 years.

At the beginning of the Christian era the science of medicine was in its infancy among the Jews, who believed that disease was directly inflicted by God, or caused by evil spirits. In this, the twentieth century, could science accept such primitive pathology?

The sphere of the Church was spiritual and moral; and the clergyman was honored in every household, and welcomed in times of sickness and of sorrow. But the healing of the sick was the sacred trust of the physician, as absolutely so as the study of the heavenly bodies in their course was the sphere of the astronomer.

Unquestionably, those who had graduated that day were members of the only class fit to be trusted with the exercise of these great powers of healing. Their Alma Mater relied upon them because she knew that they possessed a knowledge of the science of medicine, and because they followed the highest ideals of professional conduct. The superstitious and the ignorant were drawn, as by a magnet, into the pitfall of charlatanism.

Although they had passed no professional examination on this subject, they had all within them a psychic influence more powerful to relieve and more helpful in sickness than all the drugs of the British pharmacopæia. This magical force made medicine greater than a science—Go forth and use it wisely!

A LABORATORY FOR THE STUDY OF THE ABNORMAL CLASSES

We cordially endorse the plans outlined herewith:

"To the Editor:

"The bill below has been endorsed by the leading medical, legal and religious organizations of the United States, not to mention the International Congress of Criminal Anthropology of Europe. This Bill was twice reported favorably by the Judiciary Committees of both Houses of Congress, but failed of passage through delay.

As author of the Bill, I ceased to press it in Congress for a number of years, but owing to the enormous increase of these evils, which is the purpose of the bill to prevent or lessen, I think it high time that a rigid scientific study of the individuals producing these evils be inaugurated by our Government.

The cost of these anti-social personalities to the United States is more than one billion dollars per annum, not to mention the still greater moral damage involved. The proposition is to spend $110,000 per annum to combat this enormous annual drain upon the American people by the latest methods known to science.

Address:

ARTHUR MACDONALD,
The Congressional Apts.,
100 E. Capitol Street,
Washington, D. C.

A BILL TO ESTABLISH A LABORATORY FOR THE STUDY OF THE ABNORMAL CLASSES.

Be it enacted by the Senate and House of Representatives of the United States of America assembled,

That there be established a laboratory in the Department of ———— for the study of the abnormal classes, and the work shall include both laboratory investigations and the collection of sociological and pathological data, especially such as may be

found in the institutions for the insane, dependent, defective and delinquent classes.

Section 1. That said laboratory and work shall be in charge of a director, who shall be appointed by the President, by and with the advice and consent of the Senate, and shall receive a salary of $7,500 per annum.

Section 2. For the aid of the director, there shall be appointed one anthropologist, one criminologist, one psychologist, one alienist, one neurologist, and one statistician, who shall be a mathematician, each at a salary of $5,000 per annum, one translator at $2,500 per annum, six stenographers and typewriters each at $2,000 per annum, and three clerks each at $1,800 per annum, and three mesengers each at $900 per annum.

Section 3. That the director and specialists, if necessary for the proper discharge of their duties, may place themselves in communication with State and municipal and other officials of this and other countries.

Section 4. That for the proper equipment of and carrying on the work of said laboratory, the temporary employment of specialists and other help, the purchase of instruments of precision, books and periodicals, the printing of bulletins and for traveling expenses and subsistence there is hereby authorized to be appropriated out of any money in the Treasury not otherwise appropriated the sum of $50,000, or so much thereof as may be required.

Section 5. That no appointment to said laboratory can be made, unless the appointee is fully equipped for the position he is to fill, and that such appointee cannot be removed, except for cause.

Section 6. That the final purpose of all investigations made by this laboratory shall be the prevention and lessening of social evils through knowledge gained by the scientific study of their causes.

THE PERIL OF NARCOTIC DRUGS

The board of directors of the International Narcotic Education Association, at their spring meeting in Los Angeles, May 12, 1925, beside approving the carrying to completion of the nation-wide teachers' and parents' program, adopted a resolution for a world conference on narcotic education to be held in the summer of 1926 in connection with the Sesqui-Centennial celebration in Philadelphia, to be preceded by a program of intensive study and research, attended by wide-spread educational publicity, and followed by the practical application of standard policies and programs in all lands. (Copy of the resolution follows):

WORLD CONFERENCE ON NARCOTIC EDUCATION

RESOLVED, That a World Conference on NARCOTIC EDUCATION shall be held in the City of Philadelphia about the third week in June, 1926.

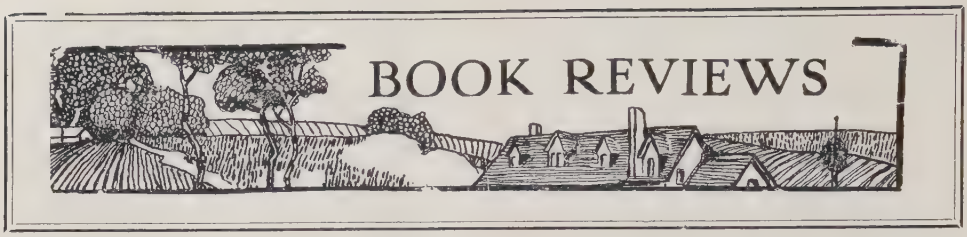
RESOLVED, That the League of Nations be requested to call a conference of the Opium Committee, the Mixed Sub-Committee of the Health Committee, and the Advisory Committee on the Traffic in Opium, and such other organizations as our PRESIDENT shall deem proper, to meet at the same time and place with educational agenda only.

RESOLVED, That the PRESIDENT of the United States be requested to invite the Governments of the World to join with our Government in participation.

RESOLVED, That Congress be requested to make an appropriation for a fitting participation of the Government of the United States.

RESOLVED, That the PRESS, the PULPIT, the MOTION PICTURES, the RADIO, EDUCATIONAL OFFICIALS, federal, state, local, CIVIL, RELIGIOUS, EDUCATIONAL, PATRIOTIC and other constructive ORGANIZATIONS and INSTITUTIONS be requested to cooperate.

BE IT FURTHER RESOLVED, That the PRESIDENT of the INTERNATIONAL NARCOTIC EDUCATION ASSOCIATION, with the advice and consent of the Executive Committee, is hereby authorized to appoint committees and take other steps deemed necessary or advisable to carry out the provisions of this Resolution.



The Art of Medical Treatment. By Francis W. Palfrey, M. D., Visiting Physician, Boston City Hospital; Instructor in Medicine, Harvard University. Octavo of 463 pages. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, $4.50 net.

This is a book of treatment of diseases and assumes that the reader is quite familiar with the diagnosis and pathology. It is of especial value to the students and young practitioners of medicine and gives in condensed form the most modern, up-to-date treatment, in the order of diseases due to physical agents, diseases of nutrition and metabolism, diseases of the alimentary tract, and so on throughout the various systems, concluding with a valuable appendix on diet, notes on drugs and similar subjects. While everything is in condensed form, it is, nevertheless, a good book for reference, giving, as we stated, modern, up-to-date treatment for the practicing physician.

Ocular Therapeutics. A manual for the student and the practitioner, by Dr. Ernst Franke, A. O. Professor of Ophthalmology and Chief of the Second Eye Clinic at the University of Hamburg. Translated by Clarence Loeb, A. M., M. D., Oculist to the Michael Reese Hospital and head of the Department of Ophthalmology of the Michael Reese Dispensary, Chicago, Ill. C. V. Mosby Co., St. Louis. Price, $3.50.

We feel grateful to Clarence Loeb, oculist to Michael Reese Hospital, for translating this valuable book which, in condensed form, gives us much information on our present day knowledge of the treatment of diseases of the eye. The optical and operative therapy have not been touched upon in this book, as these subjects are already treated in comprehensive works by specialists. This book is only intended for the student and the practitioners who treat the ordinary affections of the eye, telling him what to do and what not to do. It is divided into general treatment, local treatment and special parts.

Some Fundamental Considerations in the Treatment of Empyema Thoracis. By Evarts A. Graham, A. B., M. D., Members of Empyema Commission, U. S. Army; Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief, Barnes Hospital and Saint Louis Children's Hospital. This essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery in 1920. Illustrated. The C. V. Mosby Company, St. Louis. Price, $2.50.

This essay on Empyema Thoracis was awarded the Samuel D. Gross prize of the Philadelphia Academy of Surgery in 1920. And after reading the book, we are glad it had to be published, in accordance with requirements of the trustees of said fund. The treatment of empyema is getting to be more and more on a scientific basis, and the author has done his share in writing on the pathology and prevention of chronic empyema.

PERSONAL AND COMMUNITY HEALTH. By Clair Elsemere Turner, Associate Professor of Biology and Public Health in the Massachusetts Institute of Technology; Associate Professor of Hygiene in the Tufts College of Medical and Dental Schools; Sometime Member of the Administrative Board in the School of Public Health of Harvard University and the Massachusetts Institute of Technology; Fellow American Public Health Association; Major, Sanitary Corps, U. S. A. (Reserve). Illustrated. The C. V. Mosby Company, St. Louis. Price, $2.50.

This sensible book will be found of great value in the intelligent home and among students in universities, colleges or professional schools. It treats both of the health of the individual and that of the community in which he may live. It is so full of valuable advice that we have not the slightest hesitation to recommend it to all those looking for a modern work on hygiene. The part on health values and hygiene of nutrition, alone, is worth the price of the whole book. In addition, we have chapters on the hygiene of the mouth, central nervous system, disease prevention, communicable diseases, immunity, food control, water supply, waste disposal, school hygiene, industrial hygiene, disinfection and many other useful chapters. It is written in such a simple, common sense way that he who reads learns and every intelligent parent should have a copy of this book in the home for general instruction.

OLD AND NEW VIEWPOINTS IN PSYCHOLOGY. By Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University. The C. V. Mosby Company, St. Louis. Price $1.50.

This interesting little volume by the professor of experimental psychology in Johns Hopkins University, is, as might be expected, of real interest. Part of the book consists of lectures delivered at Johns Hopkins and part of papers read before the Southern Society for Philosophy and Psychology. We are glad to have these all in the present form. The subject matter is divided into five chapters on mental measurements, present day schools of psychology, psychological factors in spiritualism, the psychology of the comic, and the reading of character from external signs. We recommend the book to all those who are interested in the subject.

AN INTERMEDIATE TEXTBOOK OF PHYSIOLOGICAL CHEMISTRY WITH EXPERIMENTS. By. C. J. V. Pettibone, Ph.D., Associate Professor of Physiological Chemistry, Medical School, University of Minnesota, Minneapolis. The C. V. Mosby Company, St. Louis, Mo. Price $3.25.

This meritorious work appears now in the third edition and continues to be a valuable guide in physiological chemistry. We find considerable new matter in this edition, especially in the laboratory portion of the text, and the book throughout has been carefully revised. It is an excellent book for the medical student and for physicians who desire to keep up to date on the important subject of physiological chemistry.

SCIENTIFIC NUTRITION IN INFANCY AND EARLY CHILDHOOD. For the Student and General Practitioner, by Stafford McLean, M. D., Associate in Diseases of Children, College of Physicians and Surgeons, Columbia University, New York City; Attending Physician to the Babies' Hospital, New York City; Attending Pediatrist to the New York Orthopaedic Hospital and Dispensary; and Helen L. Fales, B.S., Formerly Research Chemist and Nutritional

Worker at the Babies' Hospital, New York City under the direction of Dr. L. Emmett Holt, and Former Member of the Staff of the Rockefeller Institute for Medical Research. Lea & Febiger, Philadelphia and New York. Price $3.75.

The feeding of infants and young children has become such an important issue in the last five years that a book of this kind is of the greatest practical value to the older practitioner who did not receive the training herein contained, and for the young man starting out. The authors are thoroughly competent men, and the book throughout shows careful attention to every detail based on practical experience. We recommend it cordially to our readers.

Methods in Surgery. Used in the Surgical Divisions of Barnes Hospital, St. Louis Children's Hospital, and Washington University Dispensary, including outlines for case history-taking preoperative and post operative care of patients, routines, diets, etc. By Glover H. Copher, M.D., Instructor in Surgery, Washington University School of Medicine; Clinical Assistant to Barnes Hospital; Surgeon to outpatients, Washington University Dispensary; Visiting Surgeon, St. Louis City Hospital. The C. V. Mosby Company, St. Louis. Price, $3.00.

This little book is full of meat and contains a large amount of miscellaneous information stated in a very practical way, easy for remembrance. It considers history notes, clinical history, rules for the x-ray department, routine in the surgical ward and operating room, the handling of post operative cases and neuro-surgical cases, special conditions and diseases, routine and special diets, etc. While this book is primarily intended for the guidance of interns and medical students, we consider it also useful for nurses and practitioners.

Lister and the Ligature. A landmark in the history of modern surgery. Compiled by the research readers of the scientific department and published by Johnson & Johnson, New Brunswick, N. J.

This little volume has been prepared by the scientific department of Johnson & Johnson, from whom a copy can be obtained. It treats of the surgical period before Lister, during his life time and after his death. It contains various extracts from the writing of this great man on ligature literature and a number of drawings made by him. It is indeed a very readable book.

Eye, Ear, Nose and Throat Manual for Nurses. By Roy H. Parkinson, M.D., Visiting Oculist and Aurist to St. Joseph's Hospital, San Francisco, California. Illustrated. C. V. Mosby Company, St. Louis. Price $2.25.

This is a valuable book for the use of nurses in relation to the eye, ear, nose and throat diseases, principally the eye. At the end of each chapter is a quiz which helps a great deal in having the nurse memorize the essentials of what she has read. While the book is very much condensed, it contains all that it is necessary for nurses to know theoretically, for after all, in these affections, the practical instruction is the main issue.

Anthropological Psychiatry. By Dr. Arthur MacDonald, Washington, D. C., Author of "Man and Abnormal Man."*

The term anthropological psychiatry is a new one in other languages as well as in English. In using this new term my purpose is to apply those facts and methods of anthropology to psychiatry which may be of most scientific value.

*"Man and Abnormal Man," U. S. Senate Document No. 187, 58th Congress, 3d Session, 780 pages, 8°, Washington, D. C.

One of the latest methods of anthropological research is to estimate the weight of the brain on living persons by means of equations. We cannot predict the weight of brain as exactly as astronomers foresee an eclipse, but I have combined an equation which I call the Lee-Walker-MacDonald formula, which so far as tested gives a fairly approximate estimate of brain weight on the living. The formula is as follows: (head length—11(x (head breadth—11) x (head height —11) x .000337) plus 406.1 equals cranial capacity in cubic centimeters, which multiplied by .93 gives the weight of the brain in grams on living persons.

Before, however, applying this combined equation to the living, I am now, for the first time, as far as I know, testing it upon the dead, where I make three measurements of the head, and then the brain is taken out and weighed; and the difference between the predicted and actual weight of brain is found. After I have tested this equation upon a sufficient number of the dead and found the percentage of error, it can be applied to the living both normal and abnormal persons.

I purpose to apply this equation to 4,000 patients in the Government Hospital for the Insane. As the error will be either larger or smaller than the actual weight of the brain, such errors in the case of large numbers of persons will balance one another, and give the approximate truth.

But it will be necessary to apply the equation to a sufficient number of persons for purposes of comparison. It is proposed to apply the equation to the 600 members of Congress as a control experiment for the normal.

As the largest number of insane is at about the age of 40, and as the average of the members of both Houses of Congress is between 40 and 50, such a control experiment will be of special value. Moreover, the insane in the hospital here at Washington come from all parts of the country.

The eleven (11) millimeters subtracted from each measurement of the head in the equation represent the average thickness of tissue on different parts of the head.

Other organs of our body can be estimated; thus if you wish to know the weight of your heart multiply your age by .0323 and add to the product 9.8322 and the result will probably be the approximate weight of your heart in ounces. This method of investigation illustrates a new phase in the scientific study of modern civilized man, which may be called anthropological psychiatry.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume V, Number IV. (Chicago Number, August, 1925.) 246 pages with 54 illustrations. Per clinic year (February, 1925, to December, 1925.) Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

This is the Chicago number, and we have to admit, blushingly, that it is the best of any published so far. Our worthy townsmen, we know will agree with this statement when we mention that among the contributors we note the names of Drs. Arthur D. Bevan, the late A. J. Ochsner, J. R. Pennington, Fred B. Moorehead, Edmund Andrews, Karl A. Myer, D. N. Eisendrath, W. W. Hamburger, Hugh McKenna, R. B. Bettman, Carl Beck, and a number of others. Among these subjects treated, we may mention surgery of the spleen, rare brain lesions, tuberculosis of the mouth, sarcoma of the stomach, Hodkin's disease in the anterior mediastinum, simplified herniotomy, chronic duodenal ileus, etc.

Biology Building

With the gift of $1,000,000 to Washington University by Mr. Charles Rebstock of St. Louis will be erected a building for biology, costing $300,000; the remainder of the gift will be used for general endowment. This is one of the largest gifts the university has ever received from individuals, and differs from the usual donation in that no stipulations are attached.

Classification of Dental Colleges

According to the *Atlantic Medical Journal*, the Dental Educational Council of America has established a predental year for 1926 as one requirement for Class A rating of dental colleges. The "two-three graduate plan of dental education" now under trial proposes two years of work in a liberal arts college followed by three years in a dental school for a degree for the general practitioner while the various dental specialties can be taught in full year graduate courses to those who elect them. The Dental Educational Council recently issued a list of dental schools of the United States: there were twenty-four in Class A, fourteen in Class B, two in Class C, and the rating of three was postponed.

Automobile Fatalities

The Department of Commerce announces that reports from thirty-nine cities of 100,000 population or more show more autobile fatalities in the four weeks ending September 12 than in the previous four weeks. In fifty-seven cities aggregating a population of 27,000,000 there were 3,313 automobile fatalities reported from January 1 to September 12, and of these 13 per cent were reported in the last four-week period. Norfolk reported no fatalities for the last eight weeks, and Albany, Cambridge, Dallas, El Paso, Fall River, Fort Worth and Somerville none for the last four weeks. Somerville, with four deaths, holds the record thus far for 1925. New York has reported to the Department of Commerce 638 automobile fatalities; Chicago, 410; Philadelphia, 191; Detroit, 183, and Cleveland and Los Angeles, 154.

Anniversary of Chicago Surgical Society

At the twenty-fifth anniversary dinner of the Chicago Surgical Society, October 2, Hotel Sherman, the speakers were charter members of the society. Dr. Edward Wyllys Andrews' subject was "Albert J. Ochsner—Our Colleague and Friend"; Dr. Weller Van Hook spoke on "The Advance in Surgery in Chicago During the Last Twenty-Five Years"; Dr. Lewis L. McArthur, "The Surgical Profession in Chicago in the Last Twenty-Five Years," and Dr. Arthur Dean Bevan, "The Teaching of Surgery in Chicago in the Last Twenty-Five Years." Among former eminent surgeons of Chicago who were charter members were Drs. Senn, Fenger, Murphy, Ochsner and John E. Owens.

American Roentgen Ray Society Election

About 450 physicians attended the twenty-sixth annual convention of the American Roentgen Ray Society, at Washington, D. C., September 22-25. Following installation of the president, Dr. Thomas A. Groover, Washington (who is also president of the Medical Society of the District of Columbia), by Dr. George W. Holmes, Boston, the retiring president, there was a symposium on gallbladder disease. A dental clinic was held by Arthur B. Crane, D.D.S., Washington, and L. M. Christie, D.D.S., Washington, to demonstrate the need for closer cooperation between the medical and dental professions. The Caldwell lecture, an annual feature, in memory of Eugene Caldwell, New York, a martyr to the roentgen ray, was delivered by Dr. James Ewing, professor of pathology at Cornell University Medical College, New York, who spoke on "Tissue Reactions to Radiation." The election of officers for 1926 on the last day of the convention made Dr. Russel D. Carman, Mayo Clinic, Rochester, Minn., president-elect; Drs. Patrick F. Butler, Boston, and Charles M. Richards, San Jose, Calif., vice-presidents; Dr. Charles L. Martin, Dallas, Texas, secretary; Dr. William A. Evans, Detroit, treasurer, and Dr. William M. Doughty, Cincinnati, member of the executive com-

mittee. The next annual meeting will be held in the spring of 1926 at Detroit, Mich.

Banting Research Foundation

The endowment of the Banting Research Foundation will be invested under the direction of the board of governors of the University of Toronto, who will act as trustees. They will pay to the governing body of the foundation the annual income from the endowment for disbursement. The present board of the foundation consists of Sir Robert Falconer, Lieut.-Col. R. W. Leonard, Dr. William E. Gallie, Prof. J. G. Fitzgerald, Prof. V. E. Henderson, Rev. Canon H. J. Cody, O. S. Macdonald and John W. Rogers. The *Canadian Medical Association Journal* says that the income from $500,000 is considered sufficient to support the foundation for some years; it is proposed to make the funds available to assist research workers either working independently or in any other university in Canada. The foundation has been established with a view to discovering means for the prevention and cure of diseases which at present are considered incurable. Neither Dr. Banting nor Dr. Best will receive anything from the foundation; they have renounced all rights to any income from royalties or patents from the sale of insulin.

Heart Disease in Michigan

The August *Bulletin* of the state department of health says that heart disease was the cause of 13.1 per cent of all deaths in Michigan in 1924, a rate of 159.2 deaths per hundred thousand of population. A comparison of the rates for heart disease in Michigan and in the U. S. registration area as a whole for eight years ending with 1922 shows that the Michigan rate was continuously higher than that of the registration area. About 60 per cent of the deaths from organic heart disease occur after the age of 65; the last census showed that 5.3 per cent of the people of Michigan were at least 65 years of age, whereas in 1870 only 2.7 per cent of the people had reached that age. The health department points out that in the last half century the population of the state has changed so that it has twice as many candidates for heart disease as formerly, and that the relatively slight increase in the rate is, therefore, no cause for apprehension.

New Whooping Cough Regulations

The department of health of Detroit notes in its bulletin that there were seventy deaths from whooping cough in that city this year up to September 1 as compared with forty-six deaths in the same period last year. New regulations have therefore been adopted to control the whooping cough situation, one of which is that whooping cough clinics will be discontinued by the department of health; physicians of the health department will not send whooping cough patients to the department clinic for diagnosis and treatment but refer them whenever possible to private physicians or to the city physician. The isolation period for whooping cough is considered as four weeks from the date of the report of the disease. The patient and susceptible contacts during the period of isolation shall be confined to the premises which include the home and rear yard only, but susceptible contacts (these are considered children of preschool and grade school age who have not previously had whooping cough) may be transferred to the home of adult friends for observation during the period of isolation.

England Alarmed by Motor Accidents

The alarming increase of motor road accidents in Great Britain is commented upon by the London correspondent of *The Journal of the American Medical Association*, who says that the latest figures unfortunately show that the increase continues. The following table for Great Britain, compiled by the National Safety First Association, shows the increase in the number of street accidents in which mechanically propelled vehicles (excluding street cars) were involved, compared with the increase in the number of such mechanically propelled vehicles:

	1921	1922	1923	1924
Killed	2,091	2,222	2,435	3,019
Injured	36,609	42,058	53,084	64,318
Accidents	38,700	44,280	55,519	67,337
Vehicles	860,082	962,115	1,127,590	1,312,357
Accidents per vehicle	44.9	46.0	48.4	51.3
Fatalities per vehicle	2.4	2.3	2.2	2.3
Veh. per acc.	22	22	20	20

"No reliable figures are available for vehicles prior to 1921 to compare with the accident returns. Within the limitations of statistical deductions, the following points arise: (a) In six years the fatalities in which motor vehicles were involved have nearly

trebled, non-fatal accidents being nearly five times as many. (b) Comparing 1924 with 1921, the number of mechanically propelled vehicles has increased by 52.5 per cent, of fatalities by 44.4 per cent, of accidents by 75.5 per cent. (c) The fatality ratio per thousand vehicles is nearly stationary. It is still double the corresponding figure for the United States, which in 1924 was 1.0, having fallen steadily from 2.4 in 1915. (d) The accident ratio per thousand vehicles is always known to the police, but numbers of non-fatal accidents never come to their knowledge. (e) The truest indication of risk would be the combination of accidents with the mileage covered by vehicles, rather than with their number.

"It is quite possible that the present-day average mileage of a motor vehicle is much more than in the past. These figures are disquieting. The average risk of accident with any given motor vehicle is increasing. This not only shows the necessity of adopting as quickly as possible every approved device and method, such as the white line, traffic control at crossroads, the off-side rule, calculated to make our roads safer, but extending the campaign for inculcating road sense to driver, cyclist, pedestrian—in fact, to all road users. That view the National Safety First Association has been steadily keeping before the public for many years.

"In London, where we are better organized than in the provinces, the accidents are proportionately lower. This seems to be due to educative work by the National Safety First Association in the schools and among the drivers of vehicles. The London bus drivers are the safest in the country. Each man undergoes a course of safety training before he is allowed on the road, and the 'freedom from accidents competition' of the association is a corollary of their training course.

"Similar training has now been organized in Glasgow, Liverpool, Manchester, Leeds and Huddersfield. Councils for the purpose are in process of formation in Edinburgh, Sheffield, Leicester, Halifax and Newcastle. More and more safety is being taught in schools, and the association's safety codes and posters are sought in larger numbers. But we are still a long way behind America in public safety organization, and the fatality ratio in that country is lower than ours in spite of their larger number of cars."

Ipana Troubadours and Their Leader

For six years S. C. Lanin has been well known on Broadway as an organizer and leader of dance orchestras, and as Broadway measures time, six years is a long stretch for popularity. Lanin's reputation was first established by his organization of an excellent dance orchestra in one of New York City's largest ballrooms. His music is familiar to a large number of New Yorkers and out-of-town visitors who seek amusement in an occasional evening of dancing.

When The Bristol-Myers Company, the supporters of the Ipana Troubadours, first decided to go on the air they sought Sam Lanin to direct their radio entertainment. Lanin agreed to undertake the organization and leadership if he could get certain individual artists picked from the country's best dance and symphony orchestras. That he did get these artists is known to many thousands of radio listeners throughout tre country.

Lucien Schmit, for instance, virtuoso 'cellist, was Walter Damrosch's first 'cellist for five seasons and is also an accomplished pianist and saxophone player. Schmit is a representative member of the group, which, under Lanin's direction, is now broadcasting every Wednesday evening from 10 to 11, Eastern Standard time, over stations WEAF, New York; WCAP, Washington; WEEI, Boston; WGR, Buffalo; WWJ, Detroit; WSAI, Cincinnati; WOC, Davenport, Iowa; and WCCO, Minneapolis-St. Paul.

A Moral Rebuke.—Maid—"The new neighbors would like to cut their grass, mum, an' they want to know if you will lend them our lawn-mower."

Mistress (highly shocked)—"Cut their lawn on the Sabbath? Certainly not. Tell them we haven't one."—Chicago Tribune.

No Need for Alarm.—Maid—"M'm, I just accidently let the baby's blanket drop out of the window."

Mother—"Awfully clumsy of you; now baby will catch cold."

Maid—"Oh, no, m'm, he won't. He was inside of it."—The Woman's Viewpoint.

If You Use It Once--

you will readily understand why so many physicians in choosing a reconstructive tonic invariably order or prescribe.

Gray's Glycerine Tonic Comp.

(Formula Dr. John P. Gray)

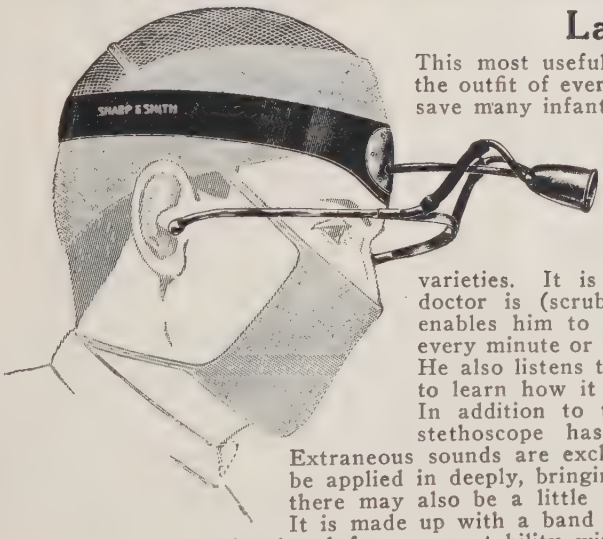
Its results will not be uncertain nor delayed, and like so many other practitioners, you will be impressed with their prompt, positive and permanent character. Best of all, your patients will be as quick to note its effects and appreciate the substantial nature of the benefits they will uniformly obtain.

The fact that Gray's Glycerine Tonic has been serving the profession for over a third of a century and that every year witnesses its increased use by discriminating medical men, "tells it own story."

The Purdue Frederick Co., 135 Christopher St., New York City

The De Lee-Hillis Head Stethoscope

Latest Model



This most useful instrument should be part of the outfit of every obstetric practitioner. It will save many infants' and mothers' lives.

It was designed especially for use during the second stage of labor of both (spontaneous and operative), but it is even more useful for all the purposes of a stethoscope than the usual varieties. It is worn on the head after the doctor is (scrubbed up) for the delivery and enables him to listen to the fetal heart tones every minute or two without infecting his hands. He also listens to the mother's heart frequently to learn how it is bearing the strain of labor. In addition to this great advantage the head stethoscope has valuable acoustic properties. Extraneous sounds are excluded; by pressure the bell can be applied in deeply, bringing it closer to the fetal heart—there may also be a little audition from bone conduction. It is made up with a band over the top of the head, with a circular fibre head band and, for easy portability, with a ribbon woven strap.

Price, $7.50 Each

SHARP & SMITH

General Surgical Supplies

Est. 1844 65 E. Lake St., Between Wabash Ave. and Michigan Blvd., Chicago, Ill. Inc. 1904

Come Out of There, Maurice

[Ad in Minneapolis Journal]

LOST—Dark gray suit coat with small brown stripe. Maurice L. Rothschild in inside pocket.

Still At It

Private Brown, a rookie, was discussing radio.

"What type of receiving sets do they use in this man's Army?" he asked. "Heterodyne or neutrodyne or what?"

"None of them, buddy," replied Corporal Smith. "They use the super-iodine."

The Beauty of Brevity

Dr. Abernethy, the famous surgeon, was a man of few words, but he once met his match—in a woman. She called at his surgery in Edinburgh and showed him a hand badly inflamed and swollen. The following dialogue, opened by the doctor, took place:

"Burn?"

"Bruise."

"Poultice."

The next day the woman called again and the dialogue was as follows:

"Better?"

"Worse."

"More poultice."

Two days later the woman made another call and this conversation occurred:

"Better?"

"Well. Fee?"

"Nothing," exclaimed the doctor. "Most sensible woman I ever met."—Chicago Daily News.

Too Confining.—Carl—"Still, in spite of what you say, I think marriage is a pretty good institution."

Carlotta—"Yes, but who wants to live in an institution?"—Princeton Tiger.

Veracity

Foreman: "How'd you come to leave your last place?"

Applicant: "I was discharged."

"Discharged, huh? What for?"

"Doing well."

"Huh? Where was you?"

"In a hospital."

Hymns of Hate

I cannot dote
On Mabel Muss.
She calls her mot-
or car "the bus."

A dreadful jay
Is Louis Love.
I've heard him say,
"Excuse my glove."

Quite trim and neat
Is Johnny Hicks,
But when we meet
He says, "How's tricks?"

Please greet Ed Wahl
With boos and hisses.
I've heard him call
His wife "the Mrs."

—Dorothy Ashby Pownall.

Practically Immortal, This Cop

[Headline, Lakeland (Fla.) Star-Telegram]

Policeman Is Again Slain in Chicago.

Words, Idle Words.—"Did you have words with your wife?"

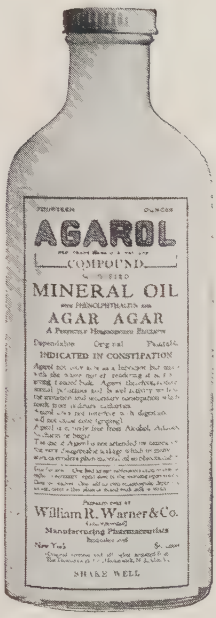
"Yes, I had words, but no opportunity for using them."—London Mail.

A Sporting Question.—She—You drive awfully fast, don't you?"

He—"Yes, I hit seventy yesterday."

She—"Did you kill any of them?"—Bison.

PROGRESS IN THE TREATMENT OF CONSTIPATION



AGAROL is the *original* Mineral Oil—Agar-Agar Emulsion, and has these special advantages:

Perfectly homogenized and stable; pleasant taste without artificial flavoring; freedom from sugar, alkalies and alcohol; no contraindications; no oil leakage; no griping or pain; no nausea or gastric disturbances; not habit forming.

IN the treatment of no other human ill has more definite progress been made than in that of constipation. Convincing proof of this is presented by

AGAROL

a remedy that in its composition not only exemplifies the latest study and research concerning the maintenance of normal bowel function, but by its practical use corrects functional intestinal derangements with a promptness and efficiency that leave no doubt of its superiority to ordinary laxatives and cathartics.

Prepared from the most carefully selected mineral oil and agar-agar, emulsified by special processes which insure minute division of the oil globules and exceptional stability of the emulsion, and combined in proportions which extended clinical studies have shown to closely reproduce physiologic conditions in the canal, it will be easy to understand why Agarol is so potent in its action, and so persistent and far-reaching in its effects.

Every day more and more physicians are turning to Agarol, and using it in preference to the old time evacuants, because they are finding, as Lawton did from his clinical experience with over 400 cases of constipation, that it "restores normal function through physiologic channels" and marks a step forward in the rational treatment of intestinal stasis.

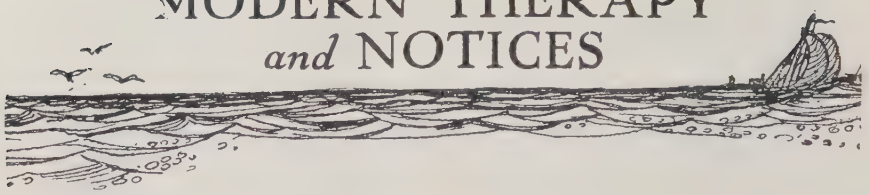
A generous trial quantity free upon request.

WILLIAM R. WARNER & CO., INC.

Manufacturing Pharmaceutists since 1856

113-123 WEST 18th STREET - NEW YORK CITY

MODERN THERAPY *and* NOTICES



PROGRESS! PROGRESS!

Improvement and progress are the order of the day, in all lines of human endeavor. Better methods of transportation, with the use of automobiles and airplanes, quicker means of communication between distant points, by means of the radio wireless instruments, and so on.

In the field of medicine and allied sciences, there have also been great strides forward during recent years. Notable among these is the perfection of a Super-Concentrated Diphtheria Antitoxin, to which has been applied the terse slogan—less bulk, less pain, quicker results.

It is a long step indeed from the days when von Behring produced the first Diphtheria Antitoxin and when the blood serum of the antitoxin horses was not refined in any way, down to the present time when we have available such a highly purified and super-concentrated product.

In addition to the smaller volume, there is also a reduction in the protein content, thus minimizing the occurrence of urticaria and serum sickness.

Further information regarding this Super-Concentrated Antitoxin, which really marks an epoch in the art of antitoxin production, may be had on application to H. K. Mulford Company, Mulford Building, Philadelphia, Pa.

ERGOT FOR HYPODERMIC USE

Some of our most valuable drugs are dependent entirely upon the pharmaceutical manufacturer for their reliability. Take ergot as an example. It is not to be expected that all natural specimens will contain the same percentage of active principle, and experience has proved that they do not. The necessity of standardizing ergot preparations has long been apparent, but chemical methods were not available because of the complexity of the active principles. Once it was thought that ergotinic acid was the active principle, but now the less of this an ergot preparation contains the higher it is rated, other things being equal. The alkaloid ergotoxin is very important, but certain amounts of the amines, histamine and tyramine, must also be present.

Since, however, ergot has long been used in medicine for its effect upon the involuntary muscles, the idea occurred to Dr. Houghton, of Detroit, in 1895, that an ergot preparation might be tested by administering it to cocks and observing its effect upon the comb, the degree of bluing or blackening produced being taken as an indication of the physiologic action of the specimen. In 1898 this method was adopted by Parke, Davis & Co. as a standard method for assaying their commercial products of the drug. It is now generally recognized as the most practicable method of assay known.

It is sometimes desirable to administer ergot hypodermically, but the ordinary fluid extracts are not suitable for this purpose. To give a small dose double efficiency, a preparation is now available called Ergot Aseptic, each cubic centimeter of which is equivalent to two cubic centimeters of the official fluid extract. Further particulars are given in the Parke, Davis & Co. advertisement elsewhere in this issue.

THE AMERICAN SPA

—where your patients can rest and recuperate under conditions most favorable. Proper food, appetizingly served; a healthful, restful environment with unsurpassed facilities for golf, tennis, hiking and horseback riding. A competent medical staff is available to co-operate with the patient's own physician. The famous French Lick Springs waters and baths are of positive efficacy in cases where their use is indicated.

"THE HOME OF PLUTO WATER"

Pluto sample and literature to the Medical Profession on request

FRENCH LICK SPRINGS HOTEL COMPANY, French Lick, Indiana

Pershing Hotel

Cor. Cottage Grove Ave. and 64th St.
CHICAGO

Appealing particularly to the professional man who lives in keeping with his station yet not extravagantly, the Pershing, which is convenient to the great South Side hospitals and clinics is high in the favor of physicians and their families. Rates $2.50 to $5 per day single, $3 to $6 per day double. A quality of accommodations usually found only at the most expensive hotels distinguishes the Pershing.

Near the famed South Parks with their beaches, golf links, bridle paths and boulevards, the Pershing is also convenient to all Chicago via boulevard motor coaches, elevated express, surface cars and railroad suburban trains.

Entering Chicago, get off at 63rd St. or Englewood and you will be only a very short distance from the Pershing. For reservations or booklet address H. E. Rice, Pres. and Manager.

THE PEOPLES HOSPITAL AND TRAINING SCHOOL FOR NURSES

The Ideal Wage Earners Hospital of Chicago

22nd Street at Archer Ave. CHICAGO

Prepared to care for emergency Cases day or night. A full Corps of experienced Physicians and Nurses always in attendance. Affiliated with the Northwestern Medical School. We solicit the co-operation of all Physicians.

Ward Rates $15.00 Per Week, Private Room Rates $30.00 to $45.00 per week.

Phones Victory 2040 and 2041.

I. C. Gary, Pres. Minnie Schrei, Supt. Tillie Schaer, Associate Supt.

SAL HEPATICA

LAXATIVE and ELIMINANT

Efficacious in all conditions where intestinal sluggishness arising from functional derangement of the liver and portal circulation is a factor. Sal Hepatica cleans the entire alimentary canal.

Samples for Clinical Purposes

Bristol-Myers Co.
New York

TONGALINE

The action of Tongaline does not merely dispose of the accumulated poisons in the blood, but seeks the ultimate cause of the excessive production and retention, thus eliminating the trouble at the fountain head.

When properly administered, Tongaline exerts a stimulating effect upon every organ of elimination, cleansing the complex sewerage system and putting it into thorough working order, whereby the sluggish blood current begins to flow more freely.

FOOD DEVITALIZATION

The present day striving for appearance and convenience has undoubtedly resulted in the devitalizing and demineralizing of many of our most important articles of food; this is especially true as regards flour, cereals, vegetables and fruits, which should contain and supply not only the essential vitamins but also the exceedingly important minerals and inorganic salts that are necessary for the encouragement of normal oxidation. Among these essential elements are iron and manganese, both of which are normal blood substances and both of which are needed to provide the mineral elements required to oxygenate the blood and maintain its structural integrity.

Without a sufficient proportion of these oxidizing elements the circulating fluid is incapable of properly burning up and disposing of the useless portions of the food intake, and the entire organism is thus overburdened with the task of excreting an undue quantity of effete products, and toxemia results.

To overcome the food deficiency referred to, Gude's Pepto-Mangan is especially valuable, as it quickly supplies the oxidizing agents, iron and manganese, in organic combination, and in exceedingly palatable and readily absorbable form. It acts not only as a stimulant of oxygenating and oxidizing power, but also as a contributor of these essential reconstructive elements to the depreciated blood and tissues, thus building and revivifying the corpuscular structure and increasing the hematinic properties of the vital fluid.

Samples, literature, etc., obtainable from M. J. Breitenbach Co., New York, N. Y.

ENDEMIC GOITER—RESULTS OF TWO YEARS OF PROPHYLACTIC MEASURES IN SWITZERLAND

Goiter or enlargement of the thyroid gland arises early in life. It was found that children of goitrous parents became dwarfish in stature and feebleminded. The thyroid is necessary for physical growth in childhood as well as for development of the mind—To prevent and reduce goiter it is necessary that kitchen salt contain at least 5 parts of iodide to a million parts of salt.

In February of 1922 a "standard-salt" was introduced by the Government of the Canton Appenzell A. Rh. (Switzerland). The standard-salt is a mixture of 200,000 pounds of ordinary kitchen salt and one pound of iodide of potassium. The mixing is done by a special method and done so evenly that every particle of salt is coated by a minute quantity of iodide. More than one-half of the population of the Canton, about 40,000 inhabitants, have used continuously this standard-salt since two years. It was also used in dairies.

The *results* surpass all expectations.

1. They were best with infants. Owing to the use of standard-salt by the prospective mothers no babies were born with goiters; before there were 50 per cent of new-borns who showed thyroid enlargement.

2. In adults no new goiters appeared

ENDOCRINE REMEDIES

BY A RELIABLE HOUSE

ORGAN-O-TONES No. 19 (Thyro-Pituitary Co.)

Thyroid substance	1/2 gr.	Apocynum (P. E.)	1/4 gr.
Pituitary (whole)	1/4 gr.	Organotones No. 12 q. s.	7 grs.
Phytolaccin	1/2 gr.		

Prescribe: Rx—One to two capsules three or four times daily.
Indications: Obesity.
Remarks: The thyroid and pituitary both have to do with metabolism. Hypofunction of either results in decreased and sluggish metabolism. By combining these glands with phytolaccin, apocynum and Organotones No. 12, very satisfactory results have been obtained.

ORGAN-O-TONES No. 4 (Ovarian Co.)

Ovarian substance	3 grs.	Thyroid substance	1/10 gr.
Pituitary (total)	1/8 gr.	Organotones No. 12	2 grs.

Prescribe: Rx—Organ-o-tones No. 4—Ovarian Co. One capsule four times daily, after meals and at bed time.
Indications: Amenorrhea; Dysmenorrhea; sexual apathy; sterility; irregularities at puberty and the menopause; malnutrition accompanying under physical development of young girls.
Remarks: One of the most effectivee of the endocrine remedies. Due to the fact that dysovarianism is more often of thyroid or pituitary origin than ovarian, this formula has proved beneficial in cases where ovarian substance alone had been tried without results.

Write us for Endocrine booklet.

COLE CHEMICAL COMPANY, Dep't R

3727 Laclede Avenue **St. Louis, Missouri**

TESTOGAN

For Men

THELYGAN

For Women

Formula of Dr. Iwan Bloch

After eight years' clinical experience these products stand as proven specifics

INDICATED IN SEXUAL IMPOTENCE AND INSUFFICIENCY OF THE SEXUAL HORMONES

They contain SEXUAL HORMONES, i. e., the hormones of the reproductive glands and of the glands of internal secretion.

Special Indications for Testogan:

Sexual infantilism and eunuchoidism in the male. Impotence and sexual weakness. Climacterium virile. Neurasthenia, hypochondria.

Special Indications for Thelygan:

Infantile sterility. Underdeveloped mammae, etc. Frigidity. Sexual disturbances in obesity and other metabolic disorders. Climacteric symptoms, amenorrhea, neurasthenia, hypochondria, dysmenorrhea.

Furnished in TABLETS for internal use, and in AMPOULES for intragluteal injection.

Prices: Tablets, 40 in a box, $1.75 **Testogan Ampoules, 12 in a box, $2.50**
100 in a box, 3.50 **Thelygan Ampoules, boxes of 12, 2.50**

EXTENSIVE LITERATURE ON REQUEST

CAVENDISH CHEMICAL CORPORATION

88 Park Place *Sole Agents Established 1905* **New York**

and existing goiters were arrested in their development.

The endemic goiter will be done away by standard-salt in one generation.

3. Many medical measurements have shown that in young individuals goiters decreased slowly in size and that many of the older cases became smaller. During the last two years the freqquency of operations for goiter has diminished from 4 to 1 (75 per cent). On measuring the necks of the school children we found that the standard-salt had the same wholesome influence on the thyroid gland as iodine or iodide added to the drinking water. But standard-salt is much cheaper and the whole proceeding much more simple; it works automatically in the whole population.

4. For those suffering from Exophthalmic goiter and for others that are oversensitive to iodine our standard-salt is free from danger according to our experiments on a large scale. In contrary it is wholesome even to those patients, because the quantity of iodine is so very small; half a grain during one year for every person! It corresponds to the physiological minimum of iodide necessary to human beings. It contains as much iodine as under natural conditions is taken up in countries free from goiter.

5. In February, 1924, in Switzerland more than 700,000 inhabitants used standard-salt daily. Owing to the extraordinary result and the general success in some parts of Switzerland no other salt is sold.

Conclusion—Wherever there is endemic goiter standard-salt must be used in the kitchen as well as generally by those who prepare food, like bakers, butchers, in cheese factories, etc. It also should be given to the cattle. Standard-salt is no medicine but a natural and necessary addition to our food. It will cure many of our goitrous patients and will prevent all children from developing goiters.

Standard-salt will free Switzerland and other countries from goiter and cretinism.

Red Cross Sektion Herisau,
H. Eggenberger, M. D.,
Chairman.

Chicago Maternity Hospital and Training School for Nurses and Midwives

Address DR. EFFA V. DAVIS
512 Wrightwood Ave.
CHICAGO

NAFTALAN
(Lanaftal—Stiewe)
(Magdeburg—Germany)

Anaesthetic, reducing Antiphlogistically and Antiseptic.

FOR THE TREATMENT OF ACUTE AND CHRONIC ECZEMA.

After an absence of seven years from the American market, due to war conditions this *valuable product* is again obtainable.

Literature and samples mailed on request.

Your Druggist will be glad to dispense NAFTALAN (STIEWE) on your prescriptions.

Sole distributors for the United States.

Ft. Dearborn Drug & Chemical Company
INCORPORATED
214 West Main St. - LOUISVILLE, KY.

The Belmont
CHICAGO

ADVANTAGES

OVERLOOKING BELMONT YACHT HARBOR AND LINCOLN PARK GOLF COURSES • • •
A NEW HOTEL-700 ROOMS OPENED EARLY IN 1924 ALREADY FAMOUS FOR ITS HOSPITABLE ATMOSPHERE • • •

SPECIAL MONTHLY RATES
WRITE FOR BOOKLET

G.E. Billingsley
Manager

SHERIDAN ROAD AT BELMONT AVE.

FORMULA

Guaiacol 2.6, Formalin 2.6,
Creosote 13.02, Quinine 2.6,
Methyl Salicylate 2.6,
Glycerine and Aluminum Silicate, qs 1000 parts,
Aromatic and Antiseptic Oils, qs

In Glandular Swellings, Boils and Carbuncles, etc.

The analgesic effect of the emplastrum

Pneumo-Phthysine
TRADE MARK

Is particularly indicated. The application exerts a soothing effect, reduces the inflammation and assists in combatting the pathological condition.

PNEUMO-PHTHYSINE affords most satisfactory results in practically every type of inflammatory condition. It reduces fever temperature without disturbing the digestion.

PNEUMO-PHTHYSINE does not have to be heated before application, but when applied to the skin the medicaments are readily absorbed, affording their well known therapeutic effects in the quickest possible manner.

PNEUMO-PHTHYSINE is an ethical product which is not advertised to the public.

Mail coupon for free clinical specimen.

PNEUMO-PHTHYSINE CHEMICAL CO.
220 West Ontario Street CHICAGO

Pneumo-Phthysine Chemical Co.,
Dept. C.R., 220 West Ontario St.,
Chicago.

Gentlemen:

Please send me free of charge, a clinical trial specimen of PNEUMO-PYTHYSINE.

Dr. .....

Address .....

.....

Disapproves of Films Teaching Sex Morals

Warning against sex films advertised as presenting a great moral lesson is given by *Hygeia*, popular health magazine published by the American Medical Association, in its July issue.

"Such films are sometimes advertised to be shown 'to men only' at one period of the day and 'to women only' at another session. These pictures are seldom scientifically correct and seldom educational in the better sense of the word. They usually are salacious and suggestive," says *Hygeia*.

Even those sex education films that are scientifically correct should be shown only to carefully selected audiences of parents and teachers, the magazine believes.

Problem of the Near Deaf and the Deaf.—In New York some New York otologists, with others interested in the problem, instituted an organization in 1910, which was designated the New York Organization for the Hard of Hearing. From this parent organization other clubs were gradually created, until at present many of the larger cities throughout the Union have such clubs. In 1919 these organizations, which now exist in thirty-five cities, formed a national organization known as the American Federation of the Organizations for the Hard of Hearing. This federation is an active, enthusiastic corporation composed of a body of intellectually alert American citizens who know what they want and are adopting the best methods to attain it. Looking into their faces, as I did in addressing them last year in their annual meeting, one could not but be impressed with their earnestness of purpose and desire for advice and direction. C. W. Richardson, Washington, D. C. (Journal A. M. A., June 6, 1925), urges that all otologists should be in touch with the organization in their immediate community, or with the federation, in order to aid in guilding their work and assist them in shaping their course. The conservation of hearing is only a method of applied preventive medicine. Laymen should be taught through semi-medical and lay journals the methods to be pursued with regard to this conservation. An important field of investigation, of great interest to otology, has been undertaken under the auspices of the National Research Council, of the resident and day schools for the deaf of the United States. The funds have been supplied by the Laura Spelman Rockefeller Foundation.

The Seasonal Prevalence of Infantile Paralysis. Seasonal Variation in Case Fatality Rate.—Aycock and Eaton (Am. Jour. Hyg., 1924, 4, 681) state that there is a marked seasonal variation in the ratio of reported morbidity to reported mortality of infantile paralysis. This variation, in their opinion, is due largely to failure to recognize the milder forms of the disease in its "off season" and to a lesser extent to delayed reporting of cases as against prompt reporting of deaths. According to a calculated seasonal morbidity on the basis of observations, infantile paralysis, although preponderantly a summer disease, prevails to a greater extent in the season from December to May than is shown by the reporting of cases. A calculated morbidity for 1921 also shows a secondary increase in the prevalence of the disease in March, which was not shown in the reporting of cases.

Summary of Birth, Death and Infant Mortality Rates.—The Department of Commerce announces that birth rates for 1924 were higher than for 1923 in sixteen of the twenty-five states for which figures for the two years as shown. The highest 1924 birth rate (31.9 per thousand population) was in the rural districts of North Carolina, and the lowest (14.9) in the rural districts of Montana. Death rates for 1924 were lower than for 1923 in twenty-three of twenty-nine states shown for both years. Record low rates appear for Connecticut, Delaware, Kansas, Kentucky, Maine, Massachusetts, Montana, Nebraska, Ohio, Pennsylvania, Vermont, Virginia and Wisconsin. The states having higher death rates for 1924 than for 1923 are California, Florida, Mississippi, Oregon, South Carolina and Washington. The highest 1924 death rate (22.1 per thousand population) was in the urban districts of Mississippi, and the lowest (6.5) in the rural districts of Montana. Infant mortality rates for 1924 are generally lower than those of 1923; only three of the twenty-five states show higher rates in 1924. The highest 1924 infant mortality rate (121.6) was in the urban districts of South Carolina, and the lowest (51) in the rural districts of Nebraska. Infant mortality rates are shown for both years of forty-four cities of 100,000 population or more in 1920. For thirty-six of these cities the 1924 infant mortality rates are lower than those of the previous year. The highest 1924 rate (92) is for Trenton, N. J., and the lowest (45.3) for Seattle.

Exophthalmic Goiter (Graves' Syndrome) and Involuntary Nervous System.—In three cases of exophthalmic goiter cited by Leo Kessel and H. T. Hyman, New York (Journal A. M. A., June 6, 1925), there developed, apparently without predisposing cause, an acute "crisis." When there was no doubt that the crisis was progressing toward dissolution, thyroxin was administered intravenously. After a latent period of from twelve to sixty hours, these patients began to improve and were practically well on the eighth day following the injection. The period of latency and the prolonged effect of the drug correspond to the time factor observed in all thyroxin effects. Two of the three patients eventually died. Whether the fatal issue might have been prevented by repeated injections of the drug is an open question. In the patient now under observation, the authors are considering the regular administration of smaller doses. In three other instances in which thyroxin was used for a similar condition, death occurred before the expiration of the latent period, as shown in the table. Mindful of the danger of basing conclusions on so few observations, of a necessity imperfectly controlled, nevertheless the authors are inclined to attribute to the thyroxin the beneficial results obtained. At present they do not recommend this therapy for any manifestation of exophthalmic goiter other than the "crisis"; but the use of thyroxin in the treatment of the crisis of exophthalmic goiter is suggested, not as a firmly established therapeutic procedure, but as a heroic measure in the presence of a fatal prognosis.

YOU MEN
who are tired
of the usual convention places

HERE is a different, better, much more interesting and enjoyable convention site—famous French Lick Springs Hotel, the home of Pluto Water, known the world over as America's premier health and recreation resort. A less expensive place, too—meals and room are included in the moderate rate you pay at French Lick Springs; and you avoid the heavy theatre, restaurant, taxicab and other entertainment bills that other convention sites require of you. Doesn't that picture the sort of place your organization would do well to choose next time?

There is renewed health for you here in the bubbling natural waters of the Pluto, Bowles and Proserpine Springs. Severe winter is unknown in this semi-southern Cumberland foothills region. Golf is played on the two 18-hole French Lick Springs Hotel courses long after weather stops all thought of golf most other places. And this superb, perfectly appointed and equipped metropolitan hotel affords other diversions in abundance.

Ready now, too, is the large new wing containing, among other features, a well-ventilated day light ground floor convention auditorium flexibly arranged so that meetings of any size from 50 to 1500 persons can be held without leaving the hotel.

Everyone intends to visit French Lick Springs some day. Your next convention is your opportunity to do so. Write now for illustrated booklet with detailed convention information. Address Convention Secretary, French Lick Springs Hotel Co., French Lick, Indiana.

"Home of Pluto Water"

FRENCH LICK SPRINGS HOTEL

THE PROSPECTIVE MOTHER

If at all anemic, should have special attention during the period of gestation, in order that she may be fully prepared for normal parturition and lactation. In addition to cheerful surroundings, nourishing food, moderate exercise and hygienic care generally, a readily absorbable, promptly assimilable, non-irritant and non-conspitating hematinis is indicated. These requirements are fully met by Gude's Pepto-Mangan, the well known combination of organically combined iron and manganese. This standard product is now available in tablet, as well as in liquid form. Gude's Pepto-Mangan in tablet form is equally as efficient, medicinally as the liquid, and is a very cleanly and convenient method of administering the remedy, for those who prefer it. Each two tablets is equivalent in dosage to one tablespoonful Gude's Pepto-Mangan liquid, the active medicinal ingredients of the two forms being identical. Samples and literature are obtainable from the manufacturers, M. J. Breitenbach, New York.

TONGALINE

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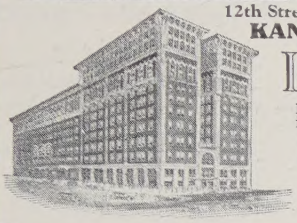

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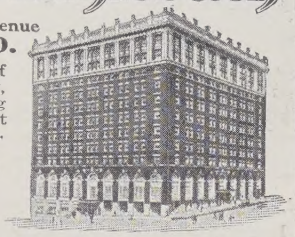

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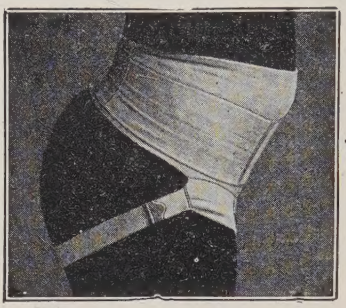

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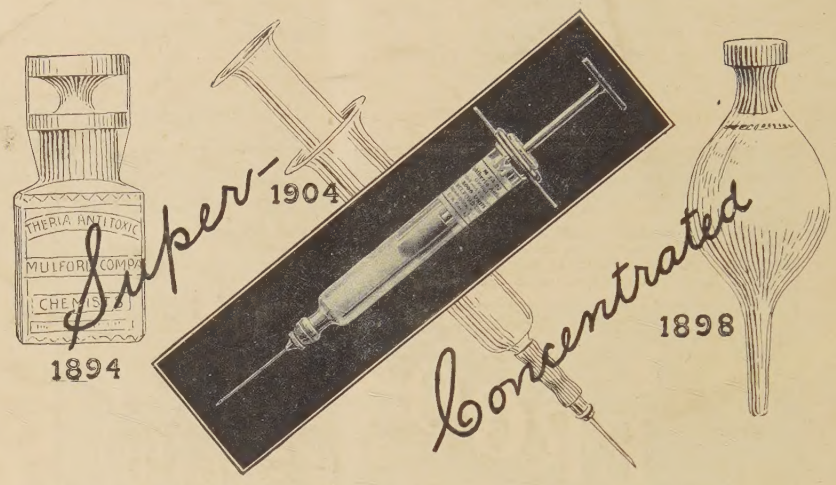

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